目　　錄

理事長序

各位會員好：

轉眼間，接任台灣男性學醫學會理事長一職已將近三年了，感謝理監事們三年來的指導與督促，更感謝各位會員全力支持與熱情參與，在秘書處積極策劃下，使得本學會各項活動得以順利進行且廣受好評。今年大會適逢本會第七屆理監事改選，所以選擇在本人任職之所在地－高醫舉辦。

這次大會分為兩個部份，第一部份為 Pre-Congress Symposium，已邀請數位國內男性學資深醫師和國外男性學知名學者擔任專題演講的 speakers，內容包括 Section I：New Insight of Male Sexual Medicine，和 Section II：Androgens-Androgen Receptor Function in Urology。第二部份為學術演講會，內容包括一般論文演講、得獎論文發表、四位國外知名學者的專題演講、不孕症研討會、兩性議題、醫學法律以及感染防治等議題，內容相當豐富且精彩，請大家拭目以待。

今年年會有一份特別的禮物要贈送給各位會員們，它是台灣本土出版的第一本男性性功能障礙專用教科書，由國內各大醫院的二十三位性學專家包括泌尿科、心臟科、新陳代謝科、家醫科、婦產科、精神科、老人醫學科及復健科等各科專科醫師共同執筆精心著作而成，並在性學大師呂福泰教授及林信男教授的強力推薦下，呈獻給大家。

此次特別要感謝高醫泌尿科團隊的協助，精心策劃各項會前工作、規劃場地課程、協調行程、整合硬體設備及人力調派，使大家能在一個舒適的環境下來進行學術研討會，讓我們大家一起感謝他們辛苦的付出。

在此特別要呼籲各位會員同道們，除了開會吸收新知和交換心得之外，希望大家能充分利用本次會議以外的閒暇時間，一起享受南台灣和煦的春光，一掃冬日的陰霾，徜徉在港都的海風裡，享受幸福，感受高雄的熱情活力。

相信這將會是一次令人難忘且回味無窮的醫學會議，期待能帶給大家收獲滿滿！最後，敬祝

大家　身心健康
大會　圓滿成功

王起杰　謹識
2011.03.05
於高雄醫學大學附設醫院

大會注意事項

壹、論文發表

一、(1)分一般論文及論文獎口頭發表兩組。
(2)每題演講及討論：一般論文10分鐘，論文獎15分鐘；一般論文7分鐘（論文獎12分鐘）時第一聲鈴響，8分鐘（論文獎13分鐘）第二聲鈴響並開燈，演講即應結束，隨即討論2分鐘。
(3)敬請演講者嚴格遵守，謝謝合作。

二、外賓特別演講
每題演講及討論共40鐘；34分鐘時第一聲鈴響，35分鐘時第二聲鈴響並開燈，演講即應結束，隨即討論5分鐘。

三、如果演講未結束，請座長提醒演講者時間已到。如演講時間已到，即開燈結束演講並省略討論。

四、敬請各座長嚴格控制演講及討論時間，以利節目進行。

貳、一般事項

一、報到
報到時間：3 月 5 日上午 8 時 30 分至下午 16 時 30 分止。
3 月 6 日上午 7 時 30 分至 11 時止。
報到地點：高雄醫學大學附設中和紀念醫院啓川大樓六樓中庭辦理報到。

二、會員大會
3 月 5 日 11:20 至 12:00 於啓川大樓六樓第二講堂舉行，敬請會員踴躍參加。

三、理監事聯席會議
於3月6日（星期日）下午13時起，假福客來餐廳進行第七屆第一次理監事聯席會議並改選理事長、常務理事及常務監事。

四、醫療商品展示
會議期間各參展廠商將於會場外中庭廣場舉辦醫療商品展示，歡迎參觀。

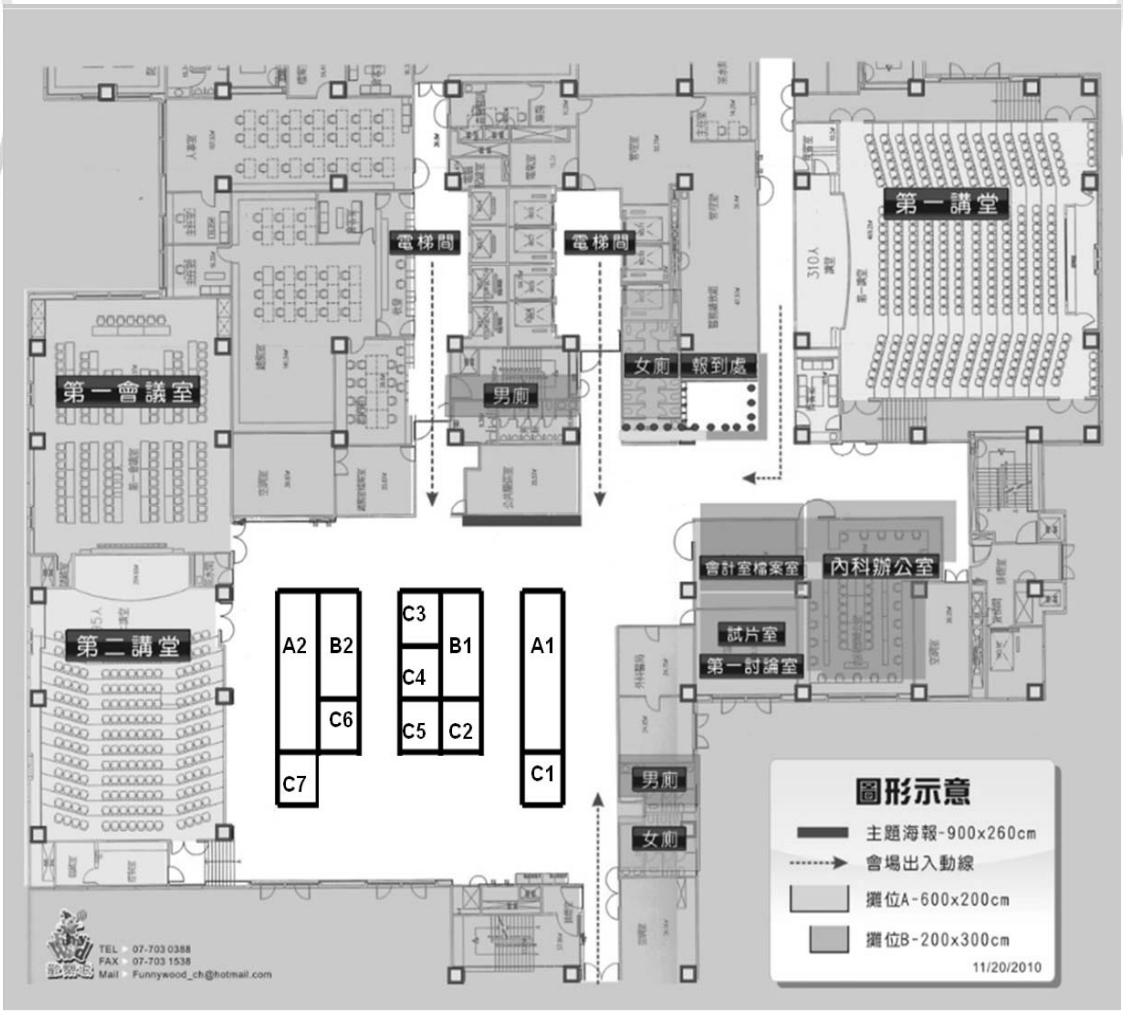
五、午餐供應
敬請與會人員憑午餐券兌換盒餐便當，同時於第一會議室進行 Lunch Symposium。

六、停車資訊
高雄醫學大學附設中和紀念醫院地下停車場提供停車，原停車費每小時 30 元，與會會員停車享八折優惠價（請務必持停車證至服務台加蓋大會印章才可享八折優惠）。各車輛駕駛人應自負責其車輛及物品之安全，本場只供停車，不負保管責任。

交通示意圖


自由路出口
鼎金系統交流道
中山高速公路
博愛一路
同盟一路
北平一街
自由一路
建工路
和川停車場
醫研大樓
高雄醫學大學校區
高雄捷運
後驛站
經遠一街
察哈爾一街
第二停車場
第一停車場
三民公園
三民國中
博愛國小
附設中和
紀念醫院
急診室入口
十全一路
民族一路
愛國
國小
熱河一街
泰安街
九如路出口
九如二路
高雄捷運
火車站
蕭世傀 繪製

會場分佈圖



- A1: 輝瑞
- A2: 禮來
- B1: 拜耳
- B2: 友華
- C1: 安斯泰來
- C2: 昇橋
- C3: 健永
- C4: 合記
- C5: 默沙東
- C6: 守恆
- C7: 普登

會議議程表

100/3/5 (星期六)	第一講堂	第二講堂	第一會議室
08:30-16:30	啓川大樓六樓中庭廣場辦理報到、繳費		
09:00-11:20		New Insight of Male Sexual Medicine	Androgens-Androgen Receptor Function in Urology
11:20-12:00		Annual Meeting 暨理監事選舉	
12:00-13:00			Lunch symposium 呂福泰教授
13:00-13:15	TIME BREAK		
13:15～13:45	論文獎發表-臨床組 (B1～B2)	論文獎發表-基礎組 (B3～B4)	第七屆理監事選舉開始
13:45～14:00	住院醫師組論文獎發表 (R1)	不孕症研討會	
14:00～15:20	一般論文演講 Prostate (P-1～P-8)		
15:20～15:40	TIME BREAK		
15:40～16:20	(G1) Special Lecture 辛鍾成教授	不孕症研討會	第七屆理監事選舉開始
16:20～17:00	(G2) Special Lecture 呂福泰教授		
17:00～17:40	兩性議題 比上不足、比下有餘 簡邦平醫師	感染議題 性與性病 李瀛輝醫師	
18:30～	大會晚宴（福客來餐廳）		
100/3/6 (星期日)	第一講堂	第二講堂	第一會議室
07:30-11:00	啓川大樓六樓中庭廣場辦理報到、繳費		
08:00-09:00	一般論文演講 Testosterone Deficiency (T-1～T-6)	一般論文演講 Infertility (I-1～I-9)	
09:00-09:35	Special Lecture 黃志賢醫師		
09:35-09:50	TIME BREAK		
09:50-11:00	一般論文演講 Sexual Dysfunction I (S-1～S-7)	一般論文演講 Sexual Dysfunction II (S-8～S-14)	
11:00～11:40	醫學法律 醫療糾紛之爭點整理 蔡秀男醫師		

第六屆理監事

理　事　長：王起杰

常務理事：孫光煥　黃志賢　劉詩彬　簡邦平

理　　事：江漢聲　吳季如　吳建志　吳錫金　李祥生　林登龍　陳明村
黃一勝　黃世聰　楊緒棣

常務監事：張進寶

監　　事：徐慧興　莊正鏗　張宏江　蔡德甫

顧　　問：林信男　陳光國　謝汝敦

秘　書　長：劉家駒

財　務　長：李永進

大會暨學術演講會工作人員

理　事　長：王起杰

學　術　組：簡邦平　吳錫金　林永明　林登龍　黃一勝　黃世聰　黃書彬
劉詩彬　楊緒棣

總　務　組：闕光瞬　黃琮懿　李香瑩　溫聖辰　陳思翰　李宗熹　蘇裕捷

會　務　組：許　杏　張艾文　蔡岳峰　蔡嘉駿　阮序承

接　待　組：張苑真　翁才懿　洪玉津　李瑞美　李美慧

財　務　組：李永進

秘　書　組：劉家駒　何秀珠

秘　書　長：劉家駒

財　務　長：李永進

會員大會程序

一、大會開始

二、全體肅立

三、主席就位

四、唱國歌

五、理事長致詞（包括來賓介紹）

六、來賓致詞

七、理事長致詞

八、男性學二大論文獎頒獎

九、理事會報告

十、監事會報告

十一、討論事項

(A)請表決九十九年度決算案。

(B)請表決一〇〇年度預算案。

十二、臨時動議

十三、散會

報告事項

一、理事會報告

(1)會務報告及計畫：

1. 99 年度工作報告。
2. 100 年度工作計劃。
3. 台灣 SDACT 委員會 99 年度工作報告。
4. 台灣 SDACT 委員會 100 年度工作計劃。

(2)經費決算及預算案：

1. 99 年度決算案。
2. 100 年度預算案。

(3)會員概況：

1. 一般會員 293 名（含永久會員 58 名）。
2. 榮譽會員 20 名（含外賓 2 名）。
3. 團體會員 5 名。

二、監事會報告

(一) 關於大會執行工作經過，理事會均已分別報告，並視實際需要配合經費執行。

(二) 關於理事會處理會務均依本會章程辦理，遇有重要事項，則召開各委員會或理監事聯席會議商討解決。

(三) 本年理事會工作積極，值得向本會全體會員告慰。

台 灣 男 性 學 醫 學 會

九十九年度工作報告

中華民國 99 年 1 月 1 日至 99 年 12 月 31 日止

一、會員大會

3 月 6 日假南山人壽教育訓練中心舉辦本會 99 年度第 6 屆第 3 次會員大會。

二、學術演講

(1) 3 月 6 日假南山人壽教育訓練中心舉辦本會第 33 次學術演講會。

(2) 8 月27-31日假台北國際會議中心舉辦本會第34次學術演講會。

三、理監事會議

(1) 3 月 6 日召開第 6 屆第 7 次理監事聯席會議。

(2) 6 月 19 日召開第 6 屆第 8 次理監事聯席會議。

(3)12月18日召開第6屆第 9 次理監事聯席會議。

四、繼續教育

(1)3 月 5 日假南山人壽教育訓練中心舉辦「Highlights of 12th APSSM & Recent Advances in Sexual Medicine」研討會。

(2)10 月 3 日假輔仁大學醫學院二樓會議廳舉辦「Male Infertility: Update Diagnosis and Treatment」學術研討會。

(3)台灣 SDACT 委員會舉辦之地方繼續教育課程。

五、出版

(1)大會手冊。

(2)研討會書籍。

(3)本會電子報會訊：

第 6 卷第 8 期、第 6 卷第 9 期、第 6 卷第 10 期、第 6 卷第 11 期。

六、網站：www.tand.org.tw

七、論文獎比賽

為促進會員之學術研究風氣，每年舉辦一次論文比賽，分基礎與臨床兩組（含住院醫師組)。其名次由本會學術暨教育委員會評定並決議頒發獎項或從缺。

八、男性學成就獎

為獎勵對國內男性學研究有貢獻之學者特頒此獎項以資鼓勵。

九、國際學術交流

Dr. Sae Chul Kim, Dr. Chris G McMahon, Dr. Farid Saad and Dr. Allen D Seftel 等人應邀蒞臨本會舉辦之「99 年度第 6 屆第 3 次會員大會暨第 33 次學術演講會」及「Highlights of 12th APSSM & Recent Advances in Sexual Medicine」研討會中作專題演講。

台 灣 男 性 學 醫 學 會

一〇〇年度工作計劃

中華民國 100 年 1 月 1 日至 100 年 12 月 31 日止

一、會員大會

3 月 5 日假高雄醫學大學附設中和紀念醫院啓川大樓六樓第二講堂舉辦本會 100 年度第七屆第 1 次會員大會。

二、學術演講

(1) 3 月 5-6 兩日假高雄醫學大學附設中和紀念醫院啓川大樓六樓第一、第二講堂及第一會議室舉辦本會第 35 次學術演講會。

(2) 8月份舉辦本會第36次學術演講會。

三、理監事會議

(1) 3 月份召開第 7 屆第 1 次理監事聯席會議。

(2) 7 月份日召開第 7 屆第 2 次理監事聯席會議。

(3)12月份召開第7屆第3次理監事聯席會議。

四、繼續教育

(1)3 月 5 日假高雄醫學大學附設中和紀念醫院啓川大樓六樓第二講堂及第一會議室舉辦「New Insights of Male Sexual Medicine」及「Androgens-Androgen Receptor Function in Urology」研討會。

(2)11 月份舉辦 APSSM 國際性會議暨地方學術研討會。

(3)台灣 SDACT 委員會舉辦之地方繼續教育課程。

五、出版

(1)大會手冊。

(2)研討會書籍。

(3)男性性功能障礙診斷與治療專書

(4)本會電子報會訊：

第 6 卷第 12 期、第 7 卷第 1 期、第 7 卷第 2 期、第 7 卷第 3 期。

六、網站：www.tand.org.tw

七、論文獎比賽

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九、國際學術交流

Dr. Tom Lue, Dr. Chawn-Shang Chang, Dr. Zhong-Cheng Xin, Dr Wei Yan 等人應邀蒞臨本會舉辦之「100 年度第 7 屆第 1 次會員大會暨第 35 次學術演講會」、「New Insights of Male Sexual Medicine」及「Androgens-Androgen Receptor Function in Urology」研討會中作專題演講。

台灣男性學醫學會
台灣性功能障礙諮詢暨訓練委員會
九十九年度工作報告
中華民國99年1月1日至99年12月31日止

一、委員會會議

(1) 5 月 1 日召開台灣 SDACT 第五屆第 4 次委員會會議。

(2) 12 月 18 日召開台灣 SDACT 第六屆第 1 次委員會會議。

二、繼續教育

全省不定期舉辦醫師訓練講座。

三、民衆教育

全省民衆巡迴衛教講座 10 場。

四、投稿計劃

針對「男性性功能障礙線上調查結果」擬定 3 篇投稿計劃。

1. The demography, prevalence of PE in Taiwanese Male.
2. The demography, prevalence of premature ejaculation in Taiwanese from Female's point of view.
3. The demography, prevalence of delayed ejaculation in Taiwanese.

五、出版

2010 年 6 月出版第五版「男性健康手冊」。

六、網站

sdact.tand.org.tw

台 灣 男 性 學 醫 學 會

台灣性功能障礙諮詢暨訓練委員會

一〇〇年度工作計劃

中華民國100年1月1日至100年12月31日止

一、委員會會議

(1) 4 月份召開台灣 SDACT 第六屆第 2 次委員會會議。
(2) 8 月份召開台灣 SDACT 第六屆第 3 次委員會會議。
(3) 12 月份召開台灣 SDACT 第六屆第 4 次委員會會議。

二、繼續教育

全省不定期舉辦醫師訓練講座。

三、民衆教育

全省民衆巡迴衛教講座 10 場。

四、研究計劃（執行中）

(1) The demography, prevalence of PE in Taiwanese Male.
(2) The demography, prevalence of premature ejaculation in Taiwanese from Female's point of view.
(3) The demography, prevalence of delayed ejaculation in Taiwanese.

五、出版

(1) 2011 年 1 月出版第六版男性健康手冊。
(2) 性福 365 衛教手冊。
(3) 男性性功能障礙診斷與治療專書。

六、網站

sdact.tand.org.tw

三月五日（星期六）
啓川大樓六樓第一講堂
【論文獎發表】

座長：林登龍醫師

時間	內容
13:15-13:30 B1	男性學論文獎 – 臨床組 A Survey of Erectile Dysfunction in Taiwan: Use of the Erection Hardness Score and Quality of Erection Questionnaire 發表人：黃一勝醫師
13:30-13:45 B2	輝瑞論文獎 – 臨床組 The Potential Impact of Metabolic Syndrome on Erectile Dysfunction in Aging Taiwanese Males 發表人：李永進醫師

【住院醫師組論文獎發表】

座長：林登龍醫師

時間	內容
13:45-14:00 R1	男性學論文獎 – 臨床組 The Impact of Irritative Lower Urinary Tract Symptoms on Erectile Dysfunction in Aging Taiwanese Males 發表人：蔡嘉駿醫師

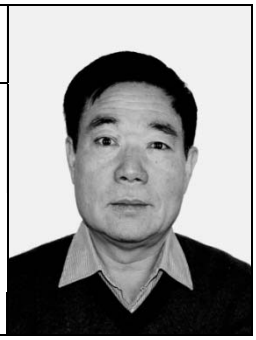
三月五日（星期六）
啓川大樓六樓第一講堂
【一般論文發表】
Prostate

座長：陳明村醫師　黃書彬醫師

時間	內容
14:00-14:10 P-1	Storage Lower Urinary Tract Symptoms are Pronounced in Middle-aged Men with Erectile Dysfunction 患有勃起功能障礙之中年男性有較顯著之儲尿性下泌尿道症狀 蔡維恭 江百凱 許炯明 馬偕紀念醫院　泌尿科
14:10-14:20 P-2	Associations of Lower Urinary Tract Symptoms with Lifestyle, Prostate Volume, and Metabolic Syndrome in Aging Males 老年男性之下泌尿道症狀與生活型態、攝護腺體積、及代謝症候群之相關性 葉信志 黃書彬 劉家駒 李永進 王起杰 高雄醫學大學附設中和紀念醫院 泌尿科
14:20-14:30 *P-3	"PARTIN TABLE" for Taiwanese Patients with Prostate Cancer 台灣侷限型攝護腺癌患者接受攝護腺切除術之 PARTIN TABLE 張景欣[1] 黃志賢[1,2] 張延驊[1,2] 鍾孝仁[1,2] 郭俊逸[1,2] 林登龍[1,2] 陳光國[1,2] 台北榮民總醫院 外科部 泌尿外科[1] 國立陽明大學醫學院 泌尿學科[2]
14:30-14:40 *P-4	Conventional Laparoscopic Radical Prostatectomy for Localized Prostate Cancer, Single Center Experience 攝護腺癌使用傳統腹腔鏡攝護腺根除手術之經驗 黃鈺文 鍾孝仁 黃逸修 林子平 林登龍 陳光國 台北榮民總醫院外科部泌尿外科 國立陽明大學醫學院泌尿學科
14:40-14:50 P-5	Practice Patterns of Post-radical Prostatectomy Penile Rehabilitation in Taiwan 台灣目前實行經根除性攝護腺癌切除術後性功能重建情形 江漢聲 黃一勝 盧星華 莊豐賓 陳國強 廖俊厚 許智凱 輔仁大學醫學院 新光醫院 台北市立聯合醫院忠孝院區 三軍總醫院 國泰醫院 天主教耕莘醫院 台北醫學大學附設醫院
14:50-15:00 *P-6	Clinical Outcomes of Castration Resistant Prostate Cancer Patient Treated with Docetaxel in KMUH : A single Institution Experience 去勢阻抗性攝護腺癌接受 Docetaxel 治療的臨床成效：高醫經驗 蔡岳峰[1] 黃書彬[1,2] 吳文正[1,2] 周以和[1]　黃俊雄[1] 劉家駒[1,3] 高雄醫學大學附設醫院 泌尿科[1] 高雄市立小港醫院(委託財團法人高雄醫學大學經營) 泌尿科[2] 行政院衛生署屏東醫院[3]
15:00-15:10 *P-7	Small Cell Carcinoma of Prostate -- 4 Cases Report and Literature Review 攝護腺小細胞癌--4 個案例報告文獻回顧 黃奕燊[1]、黃志賢[1,2]、林登龍[1,2]、陳光國[1,2] 台北榮民總醫院 外科部 泌尿外科[1] 國立陽明大學醫學院 泌尿學科[2]
15:10-15:20 *P-8	High Failure Rate in Patients with Recurrent Urethral Stricture under Optic Urethrotomy: Is that Enough? 尿道切開術在反覆性尿道狹窄的病患中具有高失敗率：這種治療方式足夠嗎？ 高偉棠[1] 林志杰[1,2] 林登龍[1,2] 陳光國[1,2] 台北榮民總醫院外科部 泌尿外科[1] 國立陽明大學醫學院 泌尿學科

三月五日（星期六）
啓川大樓六樓第一講堂
【外賓演講】

座長：簡邦平醫師

時間	講題／主講人	
15:40-16:20 G1	Effects of Icariin on Recovering Diabetic Erectile Dysfunction and Possible Mechanisms Zhong-Cheng Xin M.D. Andrology Center, Peking University First Hospital, Peking University, Beijing (100034), China	

座長：王起杰醫師

時間	講題／主講人	
16:20-17:00 G2	A Novel Sperm Sorting Technology to Retrieve Viable Non-Motile Sperm for Intracytoplasmic Sperm Injection Tom F. Lue, MD, ScD (Hon), FACS Professor and Vice Chair, Department of Urology Director, Knuppe Molecular Urology Lab. Emil Tanagho Endowed Chair, University of California, San Francisco	

三月五日（星期六）
啓川大樓六樓第一講堂
【兩性議題】

座長：徐慧興醫師

時間	講題／主講人
17:00-17:40	比上不足、比下有餘 主講人：簡邦平醫師 高雄榮民總醫院 泌尿外科主治醫師

三月五日（星期六）
啓川大樓六樓第二講堂
【論文獎發表】

座長：陳光國醫師

時間	內容
13:15-13:30 B3	男性學論文獎 – 基礎組 Determination of Human Penile Electrical Resistance and Implication on Safety for Electrosurgery of Penis 發表人：蔡芳生醫師
13:30-13:45 B4	輝瑞論文獎 – 基礎組 Parasympathetic Influence Plays an Independent and Significant Role in Inducing the Contraction of the Seminal Vesicle of the Rat 發表人：謝汝敦醫師

三月五日（星期六）
啓川大樓六樓第二講堂
【不孕症研討會】

TIME	CONTENTS	SPEAKER	MODERATOR
13:45-14:20	Regulation of Spermatogenesis: From Genetics to Epigenetics	Prof. Wei Yan	黃志賢醫師 吳建志醫師
14:20-14:35	Role of MicroRNA in Male Infertility	林永明醫師	
14:35-14:50	Association between Gene Methylation Patterns and Spermatogenic Failure	鄭裕生醫師	
14:50-15:05	Overexpression of the X-linked TEX11 Gene may Contribute to the Spermatogenic Defects in Klinefelter Syndrome	游約翔準博士	
15:05-15:20	Application of Microfluidic Device in Semen Manipulation	張宏江醫師	
15:20-15:35	TIME BREAK		
15:35-15:50	A Comprehensive Analysis of Clinical Characteristics of Male Infertility in Taiwan	郭美璋老師	林永明醫師 張宏江醫師
15:50-16:05	MRI Study in Infertile Men with Congenital Absence of Vas Deferens	江漢聲醫師	
16:05-16:20	Effect of Varicocelectomy on Non-obstructive Azoospermia-meta Analysis	黃志賢醫師	

三月五日（星期六）
啓川大樓六樓第二講堂
【感染議題】

座長：楊緒棣醫師

時間	講題／主講人
17:00-17:40	性與性病 主講人：李瀛輝醫師 高美泌尿科診所院長

三月五日（星期六）
啓川大樓六樓第一會議室
【Lunch Symposium】

座長：黃俊雄醫師

時間	講題／主講人
12:00-13:00	Erectile Dysfunction: What's New? Tom F. Lue, MD, ScD (Hon), FACS Professor and Vice Chair Department of Urology Director, Knuppe Molecular Urology Lab. Emil Tanagho Endowed Chair University of California, San Francisco

三月六日（星期日）
啓川大樓六樓第一講堂
【一般論文發表】
Testosterone Deficiency

座長：吳錫金醫師、簡邦平醫師

時間	內容
08:00-08:10 T-1	Screening for Testosterone Deficiency in Men with Erectile Dysfunction 於勃起功能障礙患者篩檢睪固酮低下症 簡邦平 高雄榮民總醫院 泌尿外科
08:10-08:20 *T-2	Determination of a Cut-off Value of Serum Bio-available Testoterone Level in Diganosing Male Late Onset Hypogonadism 決定用以判定血清中生物可用性睪固酮不足之數值 李奕慶[1] 劉詩彬[2] 謝汝敦[2] 余宏政[2] [1]台北市西園醫院 泌尿科 [2]台大醫院 泌尿部
08:20-08:30 T-3	The Impact of Androgen Receptor CAG Repeat Polymorphism on Androgen Deficiency-like Symptoms in Aging Taiwanese Men 台灣老化男性雄性素受體 CAG repeat 基因多型性對類似雄性素缺乏症狀之影響 劉家駒 [1-3] 黃書彬 [1] 李永進 [1,2] 王起杰 [1] 李威明 [1,2] 葉信志 [1,2] 阮序承 [1,2] 蔡嘉駿 [1,2] 蔡岳峰 [1,2] 吳文正 [1,3] 周以和 [1] 黃俊雄 [1] 高雄醫學大學附設醫院 泌尿科 [1] 高雄醫學大學 醫學研究所 [2] 行政院衛生署屏東醫院 [3] 高雄市立小港醫院(委託財團法人高雄醫學大學經營) 泌尿科 [4]
08:30-08:40 T-4	The Association between Male Lower Urinary Tract Symptoms (LUTS) and Sex Hormone 男性下泌尿道症狀和性荷爾蒙的相關性 廖俊厚 [1] 江漢聲 [1] 余宏政 [2] 天主教耕莘醫院外科部 泌尿科[1] 天主教輔仁大學醫學院[1] 臺灣大學附設醫院 泌尿部[2]
08:40-08:50 T-5	Effects of Testosterone on Proliferation and Androgen Receptor Expression in Human Androgen-sensitive and -Independent Prostate Cancer Cell Lines. 睪固酮在攝護腺癌細胞株之增生及睪固酮受體的影響 黃一勝 [a,c,d] 林宜佳 [a,c] 蔡德甫 [a,c] 陳宏恩 [a] 仇光宇 [a,c] 林致凡 [b] 新光醫院外科部泌尿科 [a] 新光醫院中央實驗室 [b] 輔仁大學醫學院泌尿學系 [c] 台北醫學大學醫學院泌尿學系 [d]
08:50-09:00 T-6	Paratesticular Liposarcoma – A Case Report 睪丸旁的惡性脂肪肉瘤—病例報告 盧致誠 盧納密 [1] 范文宙 鄭哲舟 柳營奇美醫院 外科部 泌尿外科

三月六日（星期日）
啓川大樓六樓第一講堂
【特別專題演講】

座長：黃一勝醫師

時間	講題／主講人
09:00-09:35	Late-Onset Hypogonadism 主講人：黃志賢醫師 台北榮民總醫院泌尿外科主治醫師 陽明大學醫學系副教授

三月六日（星期日）
啓川大樓六樓第一講堂
【一般論文發表】
Sexual Dysfunction I

座長：吳季如醫師　張進寶醫師

時間	內容
09:50-10:00 S-1	A Survey of Women Fake Orgasm and Its Correlation with Unpleasant Sexual Experiences 熟女假高潮和不愉悅性經驗之關聯性調查 陳煜 黃世聰 黃信介 許毓昭 張博誌 謝明里 林口長庚紀念醫院外科部 泌尿科
10:00-10:10 S-2	Female Sexual Dysfunction in Women with Systemic Lupus Erythematosus 女性紅斑性狼瘡病患的性功能障礙 簡邦平 高雄榮民總醫院 泌尿外科
10:10-10:20 *S-3	Comparison of Outpatient Prescriptions in Phosphodiesterase-5 Inhibitors Sildenafil, Vardenafil and Tadalafil 經由門診處方比較三種磷酸二酯酶-5 抑製藥物之使用狀況 張景欣[1] 陳光國[1,2] 林登龍[1,2] 張延驊[1,2] 吳宏豪[1,2] 黃志賢[1,2] 郭俊逸[1,2] 鍾孝仁[1,2] 黃逸修[1] 林子平[1] 台北榮民總醫院 外科部 泌尿外科[1] 國立陽明大學醫學院 泌尿學科[2]
10:20-10:30 *S-4	A Nation-wide Population Study of Trazodone Use in Urological Patients Trazodone 在台灣泌尿科病人上的使用情況研究 程威銘[1] 林子平[1,2] 林登龍[1,2] 陳光國[1,2] 陳曾基[3,4] 台北榮民總醫院 外科部 泌尿外科[1] 國立陽明大學 醫學系 泌尿學科[2] 台北榮民總醫院 家庭醫學部[3] 國立陽明大學 醫學系 醫務管理研究所[4]
10:30-10:40 S-5	Utilization of Treatment Modalities for Erectile Dysfunction in Taiwan, 1999-2009 台灣從 1999 至 2009 年勃起功能障礙治療方式使用資料 簡邦平 高雄榮民總醫院 泌尿外科
10:40-10:50 S-6	Male Urethralism Combined with Amphetamine Abuse 男性尿道戀合併安非他命濫用 簡邦平 高雄榮民總醫院 泌尿外科
10:50-11:00 S-7	Urine Nerve Growth Factor Levels are Elevated in Type 2 Diabetic Patients Aged Less Than 45 Years Old and Correlated with the Severity of Erectile Dysfunction But Not Lower Urinary Tract Symptoms 尿液神經生長因子在第二型糖尿病小於四十五歲男性會上昇同時和勃起功能嚴重度有相關但和下泌尿道症狀無關 王炯琨[1] 劉馨慈[2] 郭漢崇[2] 財團法人恩主公醫院 泌尿科[1] 花蓮慈濟醫院泌尿科 慈濟大學[2]

三月六日（星期日）
啓川大樓六樓第一講堂
【醫學法律】

座長：李祥生醫師

時間	講題／主講人
11:00-11:40	醫療糾紛之爭點整理 主講人：蔡秀男醫師 高雄市立聯合醫院泌尿科主治醫師

三月六日（星期日）
啓川大樓六樓第二講堂
【一般論文發表】
Infertility

座長：孫光煥醫師、吳建志醫師

時間	內容
08:00-08:10 I-1	It is an Era for Men to Count Moving Sperms At Home - A Novel Microfluidic Sperm Counter and Its Performance 可在家測量活動精子的時代---一種嶄新的微流道精子計數器介紹及其準確性 蔡芳生[1,2,3] 張宏江[3] 趙福杉[2] 謝汝敦[3] 臺灣大學醫學工程研究所[1] 天成醫院泌尿科[2] 臺大醫院泌尿部[3]
08:10-08:20 *I-2	The Disease Pattern of Infertile Males with Obstructive Azoospermia 塞性無精蟲症的男性不孕症患者的疾病型態 高偉棠[1] 黃志賢[1,2] 林登龍[1,2] 陳光國[1,2] 台北榮民總醫院 外科部 泌尿外科[1] 國立陽明大學醫學院 泌尿學科[2]
08:20-08:30 I-3	Clinical Experiences of 3 Cases with Congenital Unilateral Absence of the Vas Deferens 三例單側無輸精管病人的診療經驗 江漢聲[1,2] 林逸襄[3] 吳宜娜[2] 吳建志[2] 輔仁大學醫學院基礎醫學研究所[1] 台北醫學大學附設醫院泌尿科[2] 放射診斷科[3]
08:30-08:40 I-4	Increased Expression of Hypoxia-inducible Factor-1alpha in the Internal Spermatic Vein of Varicocele Patients and Varicocele-Induced Rats 精索靜脈曲張的病患及精索靜脈曲張的大鼠其內精索靜脈缺氧蛋白增加 李建達[1,3] 鄭紹宇[2,3] 國軍臺中總醫院 外科部[1] 員山榮民醫院 院本部[2] 中臺科技大學[3]
08:40-08:50 I-5	Increased Caspase-3 Expression (Apoptosis) of Bilateral Testicular Tissues in Varicocele-Induced Rats 被誘發精索靜脈曲張的大鼠其兩側睪丸組織的 Caspase-3 表現（細胞凋亡）增加 李建達[1,3] 鄭紹宇[2,3] 國軍臺中總醫院 外科部[1] 員山榮民醫院 院本部[2] 中臺科技大學[3]
08:50-09:00 *I-6	Tumor Necrosis Factor α Induces Autophagy in Germ Cells of Male Rats 腫瘤壞死因子 α 誘發雄性大鼠生殖細胞之自噬作用 蔡宜庭 黃志賢 江怡德 浦筱峰 王中麟 林登龍 陳光國 台北榮民總醫院外科部 泌尿外科 國立陽明大學醫學院 泌尿學科及生理學科
09:00-09:10 *I-7	Association of the Aberrant Expression of FGFR2 with Spermatogenic Failure 纖維母細胞生長因子受體第2型之異常表現與造精功能失調之相關 呂淳雯 鍾佳玲 林永明 國立成功大學醫學院 泌尿科
09:10-09:20 *I-8	Does Mammalians' Testicular Testosterone have Diurnal Variation Phenomenon? 雄性大鼠之睪丸內睪固酮是否有日間週期之變化? 江怡德 黃志賢 浦筱峰 蔡宜庭 王中麟 林登龍 陳光國 台北榮民總醫院外科部 泌尿外科 國立陽明大學醫學院 泌尿學科及生理學科
09:20-09:30 *I-9	The Therapeutic Potentials of Platonin in Rat Model of Testicularlar Torsion-detorsion Platonin 對於老鼠睪丸扭轉及去扭轉之治療作用 石宏仁[1] 張進寶[1] 黃俊仁[2] 彰化基督教醫院 外科部 泌尿外科[1] 台北慈濟醫院 麻醉部[2]

三月六日（星期日）
啓川大樓六樓第二講堂
【一般論文發表】
Sexual Dysfunction II

座長：黃世聰醫師、蔡德甫醫師

時間	內容
09:50-10:00 S-8	The Role of Bilateral Major Pelvic Ganglia in the Neural Pathway of Electrical Stimulation of Lesser Splanchnic Nerve-induced Seminal Vesical Pressure Increase in the Rat 兩側主要骨盆神經結在電刺激小內臟神經所引起大白鼠兩側儲精囊內壓增加之神經徑路角色 陳光國 張心湜 台北榮民總醫院外科部泌尿外科 國立陽明大學書田泌尿科學研究中心
10:00-10:10 S-9	The Effect of Platelet Rich Fibrin on Cavernous Nerve Regeneration in a Nerve Injury Rat Model 利用神經損傷大鼠模式研究血小板纖維蛋白促進海綿體神經再生的效果 吳建志[1,2] 何秀娥[3] 吳宜娜[3] 江漢聲[1,4] 臺北醫學大學附設醫院泌尿科[1] 臺北醫學大學醫學院醫學系[2] 臺北醫學大學藥學院[3] 天主教輔仁大學基礎醫學研究所[4]
10:10-10:20 *S-10	The Effects of Hyperprolactinemia on NO Synthase Expression in Carvernosal Tissue of Rat Penis 高泌乳素血症對大鼠陰莖海綿組織一氧化氮生成酶表現的效應 王中麟 黃志賢 蔡宜庭 江怡德 浦筱峰 董明倫 林登龍 陳光國 台北榮民總醫院外科部泌尿外科 國立陽明大學醫學院 泌尿學科及生理學科
10:20-10:30 S-11	Clinical Experience of a Satisfied Block for Outpatient Penile Prosthesis Implantation 令人滿意的神經阻斷麻醉方式應用於門診人工陰莖植入手術的臨床經驗 謝政興[1] 許耕榕[2] 中國醫藥大學暨附設醫院泌尿科 顯微手術性功能重建暨研究中心[2] 佛教慈濟綜合醫院台北分院 泌尿科[1]
10:30-10:40 S-12	Penile Venous Occlusion Mechanism: Evidences from an Electrocautery Effect to the Sinusoids on Defrosted Human Cadavers 陰莖靜脈閉鎖機轉：研究電燒灼對於解凍大體陰莖海綿體產生的效應所獲得的證據 謝政興[1] 許耕榕[2] 黃怡萍[3] 蔡孟宏[4] 余忠泰[5] 中國醫藥大學暨附設醫院泌尿科 顯微手術性功能重建暨研究中心[2] 生理學科[3] 解剖學科[4] 佛教慈濟綜合醫院台北分院 泌尿科[1] 病理學科[5]
10:40-10:50 S-13	Veno-occlusive Dysfunction in Young Patients Resulting from Jelqing Maneuver: Long-term Results of Penile Venous Stripping Surgery 年輕病患因陰莖增大術導致的陰莖靜脈閉鎖功能異常：陰莖靜脈截除手術後的長期追蹤結果 許耕榕[1] 謝政興[2] 溫柏樺[1] 中國醫藥大學暨附設醫院泌尿科 顯微手術性功能重建暨研究中心[1] 佛教慈濟綜合醫院台北分院 泌尿科[2]
10:50-11:00 S-14	Imaging Evidence of Advanced Penile Venous Anatomy 進階陰莖靜脈解剖學的影像學證據 許耕榕[1] 劉武翹[2] 謝政興[3] 中國醫藥大學暨附設醫院泌尿科 顯微手術性功能重建暨研究中心[1] 放射科[2] 佛教慈濟綜合醫院台北分院 泌尿科[3]

G1

Effects of Icariin on Recovering Diabetic Erectile Dysfunction and Possible Mechanisms

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Penile erection is hemodynamic procedure which is nitric oxide (NO)-mediated smooth muscle relaxation of the erectile tissue leading to blood engorgement of the corpus cavernosum during sexual stimulation under nerve controls. The process is initiated by neuronal NO release and maintained by NO released by the local vascular endothelium.

Erectile dysfunction (ED) affects 30% to 40% of diabetic men and occurs as a result of endothelial dysfunction and autonomic neuropathy. Phosphodiesterase type 5 inhibitors are the treatment of choice, but are effective in only 50% to 60% of diabetic men and the reasons for nonresponsiveness might be related to the pathological changes in corpus cavernosm accompanied with smooth muscle content and function decrease, endothelial dysfunction and diabetic neuropathy et al, which should be speculated that control of this process would be helpful for improvement of erectile function in patients with diabetic ED.

Epimedii herb has been utilized for the treatment of erectile dysfunction in Traditional Chinese Medicine for thousands of years. Icariin, a monomer ($C_{33}H_{40}O_{15}$, molecular weight: 676.67) extracted from Epimedii herb is believed as the main active composition in recent years. Previous studies reported that icariin was a cGMP-specific PDE5 inhibitor and the inhibiting potency of icariin on PDE5 was 100 times less than Sildenafil.

There have been some recent reports confirming the neuroprotective effect of icarrin on several animal models, recently, Shindel and colleagues, in a cytological study, found that icariin led to significantly greater neurite length in cultured specimens of pelvic ganglia.

In the present study, we investigated the effects of Icariin on the pathological changes in the penis of diabetic ED rats model and its possible mechanism.

A total of 70 2-month-old male Sprague-Dawley rats were used and one-time intraperitoneal STZ (60mg/kg) injection after fasted for 16 hours. Diabetic rats

were randomly divided into 6 groups including icariin-treated models (1mg/kg/d, 5mg/kg/d, 10mg/kg/d), sildenafil-treated models (1mg/kg/d), saline-treated models and age-matched control rats for 3 months, following a one-week washout period, functional assay were performed followed by histological and molecular assay.

Erectle function (ICP/MAP) was measured by electrical stimulation of the cavernous nerve, penile tissue was further evaluated for endothelium, nerve, collagen and smooth muscle with histological methods. Western blot was also performed to explore several molecular change in NO-cGMP and TGFβ1/Smad2 signaling pathway.

In the results of icariin-treated rats, the erectile function was significantly improved with higher expression of eNOS, nNOS, α-SMA. The smooth muscle, endothelium and never contents were significantly improved with a significant decrease in the protein expression of TGFβ1, Phospho-smad2 in icariin-treated models compared with that in controls.

With these results suggested that Icariin could alter pathological changes in courpus cavernosm of diabetic rats with up-regulation of NOS expression with improvement of smooth muscle, endothelium and nerve content and function, which might be regulated by TGF-SMAD signaling pathway. Further study is recommended.

G2

A Novel Sperm Sorting Technology to Retrieve Viable Non-Motile Sperm for Intracytoplasmic Sperm Injection

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Background and Purpose: For ICSI, in the absence of sperm motility, it can be virtually impossible to distinguish viable from non-viable sperm. A reliable means to identify viable non-motile sperm is needed, and would likely improve ICSI success rates. Optoelectronic Tweezers (OET) is a new technology that uses light-induced dielectrophoresis fields to distinguish individual live cells from dead cells. We assess the ability OET to distinguish viable from non-viable individual non-motile human sperm.

Materials and Methods: Fresh semen specimens from 6 healthy men were suspended in an isotonic sucrose/dextrose solution and incubated with 0.4% Trypan Blue. Within 15 minutes, under 200X magnification, 5 motile and 50 non-motile sperm (25 Trypan negative, followed by 25 Trypan positive) were randomly selected for OET assay. Individual sperm responses (attraction or repulsion) to the OET field, and Trypan staining status, were recorded.

Results: From each of 6 healthy male subjects, 55 unwashed sperm were individually assayed (total 330). All motile sperm (100%) were attracted to OET. Among Trypan negative (viable) sperm, 132/150 were attracted to the OET field; sensitivity (95% CI)= 0.88 (0.82-0.93), relative to Trypan Blue assay. Among Trypan positive (non-viable) sperm, 150/150 were repulsed by/neutral to the OET field; specificity= 1.0 (0.98-1.00), relative to Trypan Blue assay. Type I error=0, and overall assay agreement=94%.

Conclusions: OET assay can distinguish viable from non-viable non-motile viable sperm, with sensitivity and specificity that are comparable and equal to (respectively) Trypan Blue assay. OET is a promising means of sperm selection for ICSI.

Key-words: Sperm selection; Intracytoplasmic sperm injection (ICSI); Assisted reproductive technology (ART); Optoelectronic Tweezers; Dielectrophoresis

【特別專題演講】

Erectile Dysfunction: What's New?

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The research on erectile dysfunction (ED) has great advances in recent years. According to a survey of ED in Taiwan, ED occurs mostly among the group aged ≥ 40 years. The prevalence usually increases with age, nevertheless, men of all ages tended to underestimate their erectile problems. Among men who indicated that they did not have ED, 25% were found to have mild to moderate ED according to the IIEF-5 assessment. An EHS < 3, indicating the presence of ED, was reported in 26% of men. When the EHS was 4, the satisfaction of each domain of QEQ ranged from 85% to 90%.

By blocking the action of phosphodiesterase type 5 (PDE5), PDE5 inhibitors has been proved to improve ED significantly. Sildenafil citrate was the first PDE5 inhibitor drug on the market. It has favorable efficacy and safety profiles, and showed improved scores on both functional and psychosocial measures of sildenafil-treated patients. In addition, mediation modeling showed that sildenafil treatment affected maintenance directly as well as indirectly via erection hardness, when measured by IIEF item 4 (direct effect, 44.6%; indirect effect, 55.4%) or IIEF item 5 (direct effect, 56.9%; indirect effect, 43.1%).

Beside the age, diabetes is an important factor leading to ED. On one hand, hypergleycemia and insulin resistance result in endothelial dysfunction and induces functional impairment in the penis. On the other hand, diabetes-induced tissue damage comes to an end in vasculopathy, neuropath, and fibrosis. Scientists nowadays are studying if stem cells could reverse damaged tissues such as endothelium, smooth muscle, nerve, and extracellular matrix. A recent published paper, Treatment of Erectile Dysfunction in the Obese Type 2 Diabetic ZDF Rat with Adipose Tissued-erived Stem Cells, showed that three weeks after injection into the corpus cavernosum, there was a significant increase in neuronal nitric oxide synthase (nNOS) nerves as well as the number of endothelial cells in the corpora cavernosa of the rats in the treatment group.

Overall, ED is a multifactorial disease related to age, emotional distress, electro-synaptic dysfunction, endocrine disorders, and endothelial dysfunction. Such factors should be considered while giving medical treatment.

【特別專題演講】

Late-Onset Hypogonadism*

Presented by William J. Huang, M.D., Ph.D.
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Late-onset hypogonadism (LOH) is a symptom complex regarding an age-related decline in testosterone (T) levels in men over 50. The prevalence is estimated to be 18.4% in men older than 70 years of age.[1] By age 80, T levels are half that of age 20 due to reduced testicular response to LH and incomplete hypothalamic-pituitary compensation for the fall in T levels.[2] Reduction in T levels may even be accelerated by chronic illness e.g. obesity, diabetes, metabolic syndrome.

There is a strong association between LOH and central obesity. Adipose tissue converts T to estrogen, increases cortisol, insulin and leptin levels, all of which reduce T levels. Low T is associated with increased lipoprotein lipase activity, increased triglyceride uptake in central fat depots and decreased lipolysis which encourages visceral fat deposition, thus completing a vicious cycle of low T causing obesity and obesity causing low T. Symptoms of low T in aging men can be physical, mood-related, cognitive and sexual. T replacement therapy (TRT) improves hypogonadal symptoms.[3]

Low T is associated with increased mortality. Men with low T levels were found to have an 88% greater mortality risk due to all causes than men with normal T levels.[4] Low T levels predict future development of type 2 diabetes and/or metabolic syndrome. Both of these conditions are known to be causally related to cardiovascular disease. It is now recognised that low T is associated with cardiovascular risk factors such as obesity, diabetes and metabolic syndrome as well as adverse lipid profile, increased clotting, increased pro-inflammatory factors, increased arterial wall thickness and endothelial dysfunction.[5] More proof of the relationship between low T and cardiovascular disease can be found in men treated with androgen deprivation therapy (ADT) for prostate cancer. Men with prostate cancer treated with GnRH agonists within 3 months of therapy developed higher fasting insulin levels, increased insulin resistance, increased body fat mass and dyslipidemia. ADT for 1 year is associated with 20% higher risk of serious CV morbidity.[6]

There is increasing evidence that TRT lowers risk factors for heart disease in low T men by inducing favorable changes in central obesity, BMI and muscle mass, insulin resistance, glycemic control, hypertension, endothelial function, arterial vaso-reactivity, pro-inflammatory cytokines, platelet aggregation and fibrinolytic activity.[7] As well as proven improvements in mood and bone density treating hypogonadism may halt the progression of metabolic syndrome to cardiovascular disease or overt diabetes.[8] Studies show that treatment with a long acting intramuscular T formulation, reduces BMI and waist circumference, total cholesterol and triglycerides, LDL-cholesterol, systolic and diastolic blood pressure, fat mass, SGOT, SGPT and C reactive protein and increases HDL-cholesterol and fat-free body mass.

Concerns about prostate safety and TRT persist. Men with low T levels have reduced prostate size and TRT restores the prostate size to eugonadal levels. PSA levels are also lower in hypogonadal men and TRT causes a rise in PSA that is less than the yearly expected rise.[9] TRT-treated men have no greater incidence of prostate cancer (PCa) than non-treated men even in men at highest risk. The risk of developing PCa on TRT is approx 1%, the same as non-TRT treated population.[10] All available evidence demonstrates a powerful effect of T on PCa growth at low T levels near castrate T concentrations but little or no effect of T on PCa growth above the near-castrate range.[11] At the present time there is no conclusive evidence that TRT increases the risk of prostate cancer or benign prostatic hypertrophy.[12]

Take home messages are

- LOH is not an isolated phenomenon but is associated with serious co-morbid conditions
- Screen at-risk patients including those with central obesity, hypertension, dyslipidaemia, type 2 diabetes and elderly men for LOH
- Consider LOH when patients present with typical symptoms and signs

*Modified from the abstract of Dr Rosie King's talk on Late-onset Male Hypogonadism

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B1
男性學論文獎–臨床組

Journal Sexual Medecine 2010;7:2817-2824

A Survey of Erectile Dysfunction in Taiwan: Use of the Erection Hardness Score and Quality of Erection Questionnaire

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Introduction. There are currently no studies in the Asia Pacific region using the erection hardness score (EHS) and Quality of Erection Questionnaire (QEQ) to assess erectile dysfunction (ED).

Aims. To provide up-to-date data on the prevalence of ED in Taiwanese men and to validate the EHS and QEQ in this population.

Methods. A representative sample of 1,060 men aged ≥30 years completed a telephone interview. ED status was confirmed via direct questioning and using the abridged five-item version of the 15-item International Index of Erectile Function (IIEF-5). Responses regarding EHS, QEQ, marital and sexual satisfaction, and attitude to treatment were also recorded.

Main outcome measures. IIEF, EHS, QEQ.

Results. The prevalence of ED, as defined by IIEF-5, was 27% among all respondents and 29% among those aged ≥40 years. Although, the prevalence of ED increased with age, men of all ages tended to underestimate their erectile problems. Amongst men who indicated that they did not have ED, 25% were found to have mild to moderate ED according to the IIEF-5 assessment. An EHS of ≤3, indicating the presence of ED, was reported in 26% of men. The EHS was consistent with the QEQ: when the EHS was 4, the satisfaction of each domain of QEQ ranged from 85 to 90%. The QEQ score correlated well with the IIEF-5 score, and significantly affected both sexual and marital satisfaction ($P<0.005$).

Conclusions. These data indicate that EHS is a simple, practical tool for clinical use. QEQ scores appear to be independently associated with sexual and marital satisfaction, and may be of value in the assessment and monitoring of ED patients. While ED is a common health problem in Taiwan and the prevalence of ED increases with age, affected men lack awareness regarding the presence of erectile problems and the importance of initiating timely and effective treatment.

B2
輝瑞論文獎–臨床組

Journal Sexual Medicine 2010;7:3127-3134

The Potential Impact of Metabolic Syndrome on Erectile Dysfunction in Aging Taiwanese Males

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Introduction Recently, metabolic syndrome (MtS) has received increasing attention. However, investigations regarding the potential impact of MtS and its components on erectile dysfunction (ED) have not been completely clarified.

Aim To determine the potential impact of MtS on ED in aging Taiwanese males.

Main Outcome Measure The definition of MtS was according to the modified criteria developed by the Bureau of Health Promotion in Taiwan. The presence and severity of ED were evaluated by International Index of Erectile Function 5 (IIEF-5) scores.

Methods A total of 639 subjects with a mean age of 60.2 (range 40–83) years were enrolled during a free health screening. All the men had complete clinical data and questionnaires taken. Clinical variables were compared according to MtS and ED prevalence. Multiple logistic regression analysis was used to determine the independent predictors of ED and MtS

Results Using age-adjusted multivariate logistic regression analysis, our results showed that subjects with ED had significantly higher prevalence of MtS ($p<0.01$, OR=2.30, 95% CI: 1.44～3.69). The presence of MtS had significant correlation with lower IIEF- 5 scores ($p<0.01$), which were associated with the increment of MtS components number ($p<0.01$). Among the MtS components, abnormal fasting blood glucose (FBG) was the most significantly independent factor of MtS for ED (P=0.01, OR=1.60, 95% CI: 1.09～2.35). Testosterone levels were significantly lower in subjects with MtS (P=0.05), while inversely correlated with number of MtS components ($p<0.01$).

Conclusions: In aging Taiwanese males, the presence of MtS is strongly associated with ED and abnormal FBG is the most independent predictor for ED. Low testosterone level might be viewed as another possible common denominator for various pathologies linking MtS to ED.

B3
男性學論文獎–基礎組

Journal Sexual Medecine 2010;7:2891-2898

Determination of Human Penile Electrical Resistance and Implication on Safety for Electrosurgery of Penis.

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Shih-Ping Liu, MD,[†] Yuh-Chen Kuo, MD,[†§] Jyh-Horng Chen, MD, [†¶]
Fu-Shan Jaw, PhD,[*] and Ju-Ton Hsieh, MD[†]
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Introduction: Electrosurgery has been a surgical application since the late 19th century. While many urologists take this daily application for granted, the effects of electrical treatment on penile nerves and vessels have not been well documented.

Aim: To investigate the electrical characteristics of the penis and erectile tissues and to discover the potential hazards of electrosurgery on the penis.

Methods: Measurement of the electrical characteristics of three human penises in order to create models to analyze the effect of electricity on penile nerves and vessels.

Main outcome measures: Electrical resistivity of the penile shaft, electrical current density, and electric field strength on penile nerves and vessels, proportion of generated heat on the penis and electrical current density of the electrosurgery return electrode.

Results: Electrical resistivity (ρ) of the penile shaft is 127.14Ω•cm at 500 kHz. Electrical current density (J) of the penis shaft is 71.06 mA/cm^2, nerve (60.23 mA/cm^2), vessel (67.93 mA/cm^2), and return electrode (2.11 mA/cm^2). Electrical field strength (E) of the whole penis shaft is 9.03 volt/cm. The proportion of generated heat on the penis is four times as much as on other body parts of the circuit.

Conclusions: Potential and subclinical injury to erectile tissue due to electrosurgery on the penis cannot be underestimated. The injury mechanism can be attributed to a thermal (electrical current) effect and a nonthermal (mainly electrical field) effect. Ways to avoid the electrosurgical injury are: using less power (W)/electrical field and less time, biopolar electrosurgery confining the injured area, ligation to achieve hemostasis, and new laser technologies.

B4
輝瑞論文獎–基礎組

Basic and Translational Science
Urology 76:511.e1-511.e4, 2010

Parasympathetic Influence Plays an Independent and Significant Role in Inducing the Contraction of the Seminal Vesicle of the Rat

Ju-Ton Hsieh, Shih-Ping Liu, Hong-Chiang Chang, Yuh-Chen Kuo,
Jyh-Horng Chen, Fu-Shan Jaw and Vincent FS Tsai

Objectives. The role of the parasympathetic pathway in seminal vesicle (SV) contraction has not been well described. The purpose of this study was to study parasympathetic effects, the dominant muscarinic receptors subtype(s), and nitric oxide (NO) effects for SV contraction.

Methods. In vivo, SV pressure of mature male Wistar rats were recorded after electric stimulation (ES) of each pelvic nerve (PN; parasympathetic pathway) alone; bilateral PNs simultaneously, the L6 and S1 branches of the left PN; the left PN after ablation of sympathetic influence; the lesser splanchnic nerve (LSN) after ablation of parasympathetic influence; and the LSN after pretreatment of 4 muscarinic receptor antagonists or a NO donor -3-Morpholinosydnonimine (SIN-1).

Results. ES to the left PN caused frequency-dependent SV contraction, with similar results after ES to the right PN and bilateral PNs. ES to the L6 branch of the left PN caused significantly greater SV response than to the S1 branch. Ablation of sympathetic influence did not affect SV response to parasympathetic stimulation and vice versa. The inhibitory effects of 4-DAMP (M3 antagonist) and atropine (nonselective muscarinic antagonist) on SV response to ES were similar and significantly greater than those of pirenzepine (M1 antagonist) and methoctramine (M2 antagonist). Pretreatment of SIN-1 partially suppressed the SV response of ES to left PN.

Conclusions. ES via the parasympathetic pathway independently induces contraction of rat SV. NO partially suppresses the SV pressure response to parasympathetic ES.

R1
住院醫師組論文獎–臨床組

The Aging Male, September 2010; 13(3): 179-183

The Impact of Irritative Lower Urinary Tract Symptoms on Erectile Dysfunction in Aging Taiwanese Males

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Chun-Hsiung Huang[1,2] Yung-Chin Lee[1,2], Shu-Yen Huang[3] and Ching Pan[3]
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[3]Departments of Nursing, Kaohsiung Medical University, Kaohsiung, Taiwan

Objective. This study assessed the possible associations between lower urinary tract symptoms (LUTS) and erectile dysfunction (ED) in aging Taiwanese males and investigated the impact of various aspects of LUTS on ED.

Methods. A free health screening for aging males (≥40 years old) was conducted in Kaohsiung Medical University Hospital. All the subjects had completed clinical data and answered questionnaires. ED and LUTS were assessed by validated symptom scales: the International Index of Erectile Function-5 (IIEF-5) and the International Prostate Symptom Score (IPSS).

Results. A total of 339 eligible patients enrolled in this study with a mean age of 60.1 years old. In multiple logistic regression analysis, age and IPSS ($p < 0.001$ and $p = 0.013$, respectively) were significantly associated with ED after controlling other comorbidities. In a further age-adjusted multiple regression analysis, our results showed that the irritative symptoms ($P = 0.042$) have a more significant association with ED than the obstructive symptoms ($P = 0.101$).

Conclusions. Our results indicate that age and LUTS are the two most independent risk factors for ED. Aging Taiwanase males with LUTS are at increasing risk for ED, especially for those with significant irritative symptoms.

【兩性議題】

比上不足、比下有餘

簡邦平醫師
高雄榮民總醫院 泌尿外科

比上不足 比下有餘



高雄榮民總醫院 泌尿科
簡邦平醫師

有錢的與沒錢的

- 沒錢的，養豬；有錢的，養狗
- 沒錢的，在家裡吃野菜；有錢的，在酒店吃野菜
- 沒錢的，在馬路騎自行車；有錢的，在客廳騎自行車
- 沒錢的，想結婚；有錢的，想離婚
- 沒錢的，老婆兼秘書；有錢的，秘書兼老婆
- 沒錢的，假裝有錢；有錢的，假裝沒錢

正港男子漢

- 擁有又長又硬的陽具，可以熬戰一整夜
- 無論天崩地裂，依然性致勃勃
- 只要聽到對方說「快！快！我等不及啦！」就可馬上UP
- 只要性愛，完全忘了情感這回事
- 不管多累、醉了或壓力都可以做
- 男子漢絕不會有性功能障礙

性迷思讓原本正常的性愛走樣

Size that matters

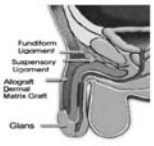




增長陰莖方法

- 手術剪斷陰莖的懸吊韌帶
- 手術去除恥骨前的脂肪層
- 減肥
- 睪固酮刺激胖弟弟的小弟弟，恰如「揠苗助長」（急不得，來日方「長」！）

便宜、不傷身、立即有效 ⇨

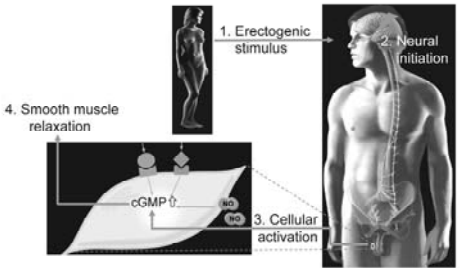


山不在高 有仙則名

- 陰莖長度類似身高
- 身體發育生長的指標
- 陰莖是拿來用的，應以功能好壞取向，不是拿來看的
- 判斷一個人的價值不能光比身高。

陰莖勃起

心理性、反射性與夜間勃起



夜間(清晨)勃起

- 每晚3～5次，每次15～20分鐘
- 發生在睡眠的快速動眼期 (rapid eye movement)
- 自發性、無法控制
- 睡午覺也會
- 隨年紀減少
- 跟春夢、膀胱漲無關

男性性反應週期

部位	興奮期	高原期	高潮期	消退期
陰莖	10-30秒內勃起	陰莖變粗，龜頭尺寸變大，顏色變紅潤	射精動作，0.8秒間隔的大收縮3-4個，接著有小收縮	5-10秒內部分消退，5-30分鐘內完全消軟，接著有長短不一的不反應期
陰囊與睪丸	睪丸內縮，陰囊縮緊提昇	因爲充血睪丸增大	沒有改變	回復正常大小，在5-30分鐘下降至正常位置
其他	乳頭挺立(不一定)	分泌幾滴射精前液	射精時喪失部分隨意肌的控制，肛門括約肌可能有規律收縮	在5-10分鐘回復平靜

女性性反應

部位	興奮期	高原期	高潮期	消退期
陰道	性興奮開始10-30秒後出現透明潤液	大量的潤液繼續形成	沒有變化	液體蓄積在陰道後壁
上 2/3	前壁伸長，陰道皺折變平	繼續擴張，接著慢慢鬆弛	沒有變化	子宮頸在3～4分鐘回復正常
下 1/3	陰道腔擴張，陰道壁漸漸充血	陰道壁快速擴張到頂點，下1/3段陰道腔收縮	以每0.75秒間隔收縮3～15次	在幾秒鐘內充血消失
子宮	上升至假性骨盆腔	在末期產生強烈而持續的收縮	整個階段強烈收縮	慢慢回復正常位置
肛門			可能有規律收縮	在幾秒內消退

兩性高潮的生理變化

- 兩性相同
  心跳、呼吸和血壓達最高點，全身熱潮，肌肉痙攣
- 女性
  子宮、陰道、肛門和骨盆肌肉以每0.8秒間隔的收縮5～12次；可連續多次，也可持續不停；可隨時中斷
- 男性
  發生射精，尿道、肛門和骨盆肌肉以每0.8秒間隔的收縮3～6次；全有或全無，無法中斷

可以噴多遠？

- 年輕人可將前段精液強力射出，離尿道口30～60 cm。後段精液黏稠度高，無法射出，只能間歇流出
- 年紀增加，射精肌肉收縮力道逐漸減退，高潮強度也會同步衰退
- 精液分泌量也會隨年紀減少
- 目前仍無增加射精強度的方法或藥物

男性的快樂泉源

- 啓動男性的性刺激通常是「由核心擴散到周邊」
- 男性可在沒有性興奮之下，直接刺激外生殖器感到興奮愉快而勃起
- 勃起後，男性的手臂、腿、唇與頸部才會對性刺激較敏感
- 增加男性情慾的方法通常跟性行為有關，包括不同的做愛方式、新鮮感、裸體、妙齡女郎、伴侶的正向反應與色情圖片
- 有些男士必須仰賴視覺刺激才能勃起

How to turn him on

- 最有效的是直接刺激男性的陰莖
- 陰莖腹側比背側更敏感些
- 龜頭、尿道口、冠狀溝與繫帶尤其敏感
- 撫弄陰囊與睪丸，也會激起性興奮
- 耳朵、嘴唇、頸部、胸部、乳頭、腋窩、肚臍眼附近、大腿內側、手指頭與腳趾頭，都可成為快樂泉源。

吸力壯不愁沒伴侶

床戲要兩人共同放鬆、想像、遠離世俗、誇大感覺、利人利己

倘若連一位婦女之手
(毫無疑問是最佳的)
都沒辦法將陰莖刺激硬起來
再無其他良方辦得到
—尼古拉斯 十七世紀

迷糊古錐的帶頭大哥

- 富含神經末梢，對疼痛、溫度與觸感特別靈敏
- 三種功能：
  1) 感應觸覺刺激
  2) 吸收勃起硬度的能量，減少陰道撞擊
  3) 圓錐外形，減低陰莖插入陰道的阻力。

增進性興奮的方法

公的喜歡

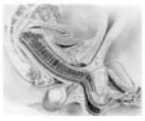
- 由核心到周圍的性刺激
- 不同的作愛方式
- 一絲不掛的噴火美女
- 體香與觸濕昧
- 聽到放浪形駭的叫床聲
- 冰火九重天

母的喜歡

- 由周圍到核心的性刺激
- 羅曼蒂克的愛情表達
- 忠貞的感情
- 親密與感性
- 維納斯蝴蝶手

正常多久應該要做一次
一次做多久？

- 性行為個別差異很大
- 沒有所謂的「正常」多久要做一次，一次要做多久
- 正常男性從陰莖插入到射精的平均時間 (分鐘)：
  美國人 13.6，英國 9.9，法國 9.3，德國 6.9，義大利 9.6
- 行房頻率跟攝護腺疾病、壽命長短沒有關聯



從陰道插入到射精以馬錶計時

參數	人數	中位數(分)	範圍
年齡18-30 (歲)	152	6.5	0.9-33.9
31-50	225	5.4	1.1-42.2
≧51	114	4.3	0.5-44.1
有割包皮	98	6.7	0.7-44.1
沒有割包皮	261	6.0	0.5-37.4
從未使用保險套	350	5.1	0.7-44.1
偶爾使用保險套	141	5.7	0.5-33.9

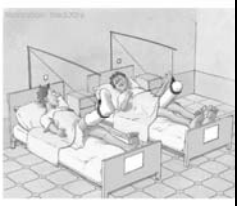
Waldinger, MD et alJournal of Sexual Medicine 2005; 2: 492-7

應所行 宜所止

- 許多人相信，勃起或行房時一定要射精，否則精液留在體內會造成早洩或攝護腺炎
- 並非每次的勃起就得按表操課，全程演練直到射精結束為止。
- 行於當行，止於當止，對身體無任何害處。

性行為與心臟負荷

- 1. 剛開始時，呼吸漸漸增快，心跳與血壓輕度上升
  2. 等到愈來愈興奮時，心跳與血壓上升更多
  3. 高潮時，心跳增快至 90-145/min (平均115)，血壓增加 30-50 mmHg
- 變化程度的影響因素：
  1. 年紀
  2. 與伴侶認識時間
  3. 先前性衝動與歡愉的程度



影響性慾因素

- 社會處境：最隱晦因素
- 性　　別：最有挑戰性的因素
- 年　　齡：最顯著因素
- 健　　康：最常見的不利因素

到底有沒有春藥？

- 在乎一心，若你深信不疑，它或許就能
- 「吃什補什」一廂情願的想法
- 至少有九百種被認為可增加情慾的東西(俗稱春藥），可做為人類容易上當的證言

酒後亂性

- 借酒裝瘋壯膽可，酒後亂倫似乎只見於電影小說
- 適度可放鬆心情
- 若達到興奮，對細膩感覺和挑情都不利
- 酩酊大醉、濫醉如泥：連走路都不行，如何強暴婦女
- 酗酒影響肝功能、神經病變、人際關係

【感染議題】

性與性病

李瀛輝醫師
高美泌尿科診所院長

壹、前言：

人的情慾世界裡，性高潮、性病與性功能障礙，是性的一體三面，性帶給人高潮、快感，但是也可能帶來挫折、無奈，甚至恐懼與焦慮。性病是經由私下且親密性接觸傳染的疾病，病人時常諱疾忌醫，延誤病情造成嚴重的後遺症。性病又具有容易傳播、容易復發、從外觀很難分辨等特性。因此，它是一種難纏與危險的疾病。美國約四分之一性生活頻繁的年輕人有性病，依據我國疾病管制局的資料顯示：淋病、梅毒與後天免疫缺乏症候群等三種法律規定必須通報的病例，近年來有逐年增加的趨勢。除此之外，其他臨床常見的性病，包括：第一型與第二型單純疱疹、以披衣菌為主的非淋病性尿道炎、尖圭濕疣(菜花)、傳染性軟疣、包皮龜頭炎與陰蝨等。這些疾病都是伴隨性交、口交、肛交甚至僅是親密的愛撫，因而傳染的常見性病。

貳、材料與方法：

為了初步瞭解性病分佈的型態，我們統計分析 2008 年 7 月至 2010 年 8 月，高美泌尿科診所因性病看診的初診人數，總共 1005 位病人，本研究著重於性病分類、診斷、治療、預防(包括伴侶治療)。

參、結果：

性病分類依照人數多寡，排列如下：單純疱疹：314 人(31.2%)、非淋病尿道炎：265 人(26.4%)、尖圭濕疣 (菜花) ：211 人(21.0%)、包皮龜頭炎：111 人 (11.0%)、淋病：84 人 (8.4%)、梅毒：20 人(2.0%)、陰蝨：10 人(1.0%)、傳染性軟疣：7 人(0.7%)、HIV 帶原者：6 人(0.6%)。多重性病者 104 人佔總性病人數 10.4%，其中雙重性病 88 人，佔多重性病人數 84.6%，三重性病 14 人，佔多重性病人數 13.5%，四重性病 2 人，佔多重性病人數 1.9%。梅毒、淋病與非淋病尿道炎治癒率高，再感染率分別為 5%、16.7%與 15%。尖圭濕疣三個月內復發率：31.8%，復發次數自 2 次至 8 次不等。11 位罹患尖圭濕疣男同性戀者，10 (91%)位在肛門附近產生菜花。27 位在肛門附近產生菜花的病人有 11(40.7%) 位是男同性戀者。26 位復發性菜花病人接受人類乳突病毒檢查，第 6 型佔 53.8%，第 11 型佔 26.9%，其餘 19.3%。14 位復發性菜花病人接受完整 3 劑 4 價人類乳突病毒疫苗 (Gardasil) 預防注射，追蹤 3 個月至 15 個月，結果顯示 14 位病人皆不再復發菜花。

肆、討論：

本診所偵測出的 HIV 帶原者幾乎全是男同性戀者(83.3%)，求診原因多數病人是因為肛門與直腸菜花。梅毒、淋病與非淋病尿道炎治癒率高，但是由於沒有遵照伴侶共同治療原則，或再次從事危險性行為，其再感染率分別為 5%、16.7%與 15%。三成以上尖圭濕疣病人復發，針對復發性病人，我們採用 4 價人類乳突病毒疫苗預防注射，初步結果顯示人類乳突病毒疫苗預防菜花效果好，值得長期觀察與推廣。生殖器單純疱疹病人，如果沒有接受壓制性治療，幾乎一年內一定會復發，接受長期壓制性治療的病人，目前追蹤結果顯示：治療期間與停藥後 3 個月內，沒有病人復發，但是單純疱疹病人接受長期壓制性治療的真正效果，仍待長期追蹤觀察。防範多重性病，在愛滋病的防護方面，扮演非常重要的角色。性病會增加愛滋病易感性與增加其傳染性，梅毒、疱疹、軟性下疳等產生表面潰瘍的性病，因為生殖器官上皮破損，使得愛滋病病毒容易進入體內。披衣菌尿道炎、淋病、滴蟲病等性病，則增加生殖器官分泌物濃度，成為愛滋病病毒的攻擊標的。因此，任何罹患淋病、梅毒、肛門附近有菜花者與男同性戀者，或其他危險性行為者，必須懷疑 HIV 病毒感染的可能性，應該建議病患接受 HIV 病毒篩檢。此外，醫病雙方都應該知道：即使穿戴保險套，也無法完全避免疱疹、菜花與陰蝨等性病感染。

伍、結論：

病人一旦感染性病，應該接受進一步檢查與治療，治療過程必須協同性伴侶治療，才能避免乒乓效應與預防再次感染。任何與性有關的疾病，包括：如何幫助性功能障礙病人恢復正常性功能、治療性傳染病，積極參與預防性病的衛教工作，都是泌尿科醫師責無旁貸的責任。

【醫學法律】

醫療糾紛之爭點整理

蔡秀男醫師
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近年來，台灣的醫療糾紛與法律訴訟案件日益增多，媒體亦往往喜於擴大披露，然而，醫療與司法人權之是非公理依然晦暗不明，病患人權與醫護人權之權利與義務衝突時，真理何在？程序正義何在？實質正義何在？人生無常，要細觀因果，善求智慧！行醫執法，皆是求真理行正義！發現問題、解決問題，探究醫療事故之因果與正義，應如何進行爭點整理呢？

台灣醫療訴訟之審理長期化，導致醫療過失責任之歸屬懸而未決，最終獲得勝訴判決所獲致之實體利益，卻可能因為程序拖延所受之程序上不利益而減損。實證醫學之積極發展，使醫療行爲之標準作業程序，客觀的診療義務標準，越來越客觀，越來越具體，對於醫療訴訟雙方當事人，進行爭點整理與證據調查程序，對所謂義務違反的醫療行為，有共同的辯論焦點，以期發現客觀醫療事故之真實，確保醫病雙方之權利保護，公平解決醫療事故紛爭。

此外，在醫學與法學專業科際整合下，「全人醫療法律倫理三面向五層次分析模式」**(MLE1354 model)**、醫療行爲機轉分析**(medical behavior analysis)**、三階段因果論 **(BMA, CEA, LEA)**、實證醫學爭點整理分析 **(EBIA-issue analysis)**、實證醫學與實證法學**(EBM & Empirical Legal Study)**等分析模式，有助於提出理論與實務之整合分析以融合醫療、法律與倫理的衝突。

「倫理分析與倫理矩陣」（**ethical analysis, the ethical matrix**），是分析系爭個案之倫理議題時，將各個主體加以細分，排列在矩陣表格之一側，另將倫理基本原則（尊重自主、行善、公平正義與不傷害原則等），排列在表格之另一側，形成一個倫理矩陣，再進一步展開平面思考，逐一進行倫理分析之分析工具。

「全人醫療法律倫理三面向五層次分析模式」，對於健康照護議題與醫療法規，進行各種面向審查，分析生物、心理、社會、倫理、文化（Bio-psycho-social-

ethics-culture）等各層次觀點，應該可以建立起一套以中華文化為基礎的台灣本土性綜合分析模式，以融合醫療、法律與倫理的衝突。

實證醫學發展至今，其應用範圍已經不僅是臨床診療，還包括醫療照護法規和政策的制定、醫療照護服務組織和管理、以及醫療事故法律訴訟。在實證醫學上，則強調醫學研究文獻的「證據等級」；在法律上，重視的是醫學臨床研究文獻在法庭上的證據能力，實證醫學的影響所及，除了改變臨床醫師的醫療行為，在法律層面，也成為法庭上處理醫療糾紛案例的重要證據。

當代實證醫學，代表的是多數專家的知識與經驗，經過客觀的科學方法驗證，可找出具體地解決臨床實務問題的最佳方案，甚至是臨床實證的準則，因此，透過實證醫學方法所形成的臨床醫學實踐上的醫療準則，與日本法上之臨床醫學實踐上的醫療水準，在概念上其實並無二致。

關於醫療行為是否具有過失，我國學者採理性醫師標準說，係融合法律經濟分析與比例原則之考量，同時也符合專業醫師在臨床決策上，通常考慮之醫療專業性、醫學倫理性與醫療證據性，以進行邏輯分析與風險評估之思維模式，由法院依據醫療常規、鑑定意見、醫療準則等，進行爭點整理予以綜合判斷之。

隨著實證醫學之發展迅速，其對醫療事故過失與因果關係之判定將有重要影響，本文認為，藉由實證醫學之方法與證據，在程序上可具體進行醫療事故三階段爭點整理：(1)個案醫療行爲之行爲機轉分析，(2)事實與證據上之爭點整理，(3)法律上爭點整理，如此將有利於因果關係與過失的判斷，對於釐清義務違反之醫療行為，與不可避免之醫療風險，可達成爭點整理方法更細緻、更具體以及更客觀之目標，以提高法律解釋與適用的客觀性。

進而言之，在因果關係的判斷上，首先，藉由實證醫學之文獻證據強度，以及專業醫療準則，建立醫療注意義務水準，進行個案醫療行為之行為機轉分析 **(BMA, behavior mechanism analysis)**；然後，再釐清義務違反之醫療行為與不可避免之醫療風險，以判定事實上因果關係是否成立 **(CEA, cause effect analysis)**；最後，在法律因果關係上，在具體個案責任成立與範圍判斷上，作出適切的利益衡量與判斷 **(LEA, legal evaluation adjustment)**，如此透過實證醫學之相輔相成，建立醫療事故爭點整理與因果關係三段論，將有利於過失與因果關係之判斷，以促進醫療事故責任之公平與正義。

【不孕症研討會】

Regulation of Spermatogenesis: from Genetics to Epigenetics*

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Male gamete production relies on successful spermatogenesis, a process through which male germ line stem cells undergo a series of differentiation programs and become sequentially spermatogonia, spermatocytes, spermatids and eventually spermatozoa. This process is clearly controlled by genetic factors, as evidenced by the fact that the human or mouse genome contains numerous testis-specific genes, many of which have been identified to be essential for sperm production. Also, mutations in some of these genes have been implicated in humane male infertility. Over the past ten years, we have identified ~500 mRNA-coding genes that are exclusively expressed in the male germ cells and display a high degree of evolutionary conservation between mice and humans. Large-scale expression profiling assays revealed that the majority of these genes are expressed in spermatocytes (meiotic male germ cells) and spermatids (haploid male germ cells). Our gene knockout studies have identified several that have an essential role in normal sperm production. I will discuss the male infertility phenotype of *Catsper3/4* and *Spem1* knockout mice, and some interesting findings relevant to clinical male infertility diagnosis and treatment.

Despite the fact that more and more spermatogenesis-essential genes are being identified, very few of them have been associated with male infertility. On the other hand, a world-wide trend of declining sperm quality over the past several decades suggests that environmental factors may also affect spermatogenesis. Such a rapid pace may imply that epigenetic factors are involved in the regulation of spermatogenesis. Recent identification of so many non-coding small RNA species (miRNAs, piRNAs, Endo-siRNAs, snoRNAs, etc.) expressed abundantly in the testis opens up a new avenue towards understanding the complex epigenetic control of spermatogenesis. I will give you an update on our progress in understanding functions of testicular small non-coding RNAs in testicular development and spermatogenesis.

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【不孕症研討會】

Role of MicroRNA in Male Infertility

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MicroRNAs (miRNAs) are short non-coding RNA molecules which play regulatory roles in repressing translation or cleaving RNA transcripts. Recent studies indicate that miRNAs are involved in the development of mammalian spermatogenesis. However, little is known about the biological functions of miRNAs in infertile men. Our study was conducted to explore the roles of miRNAs in the testes of spermatogenic failure. Testicular samples with normal spermatogenesis and samples with Sertoli cell-only syndrome (SCOS) were used for study. Total RNA was isolated from the testicular tissues for miRNA microarray analysis (Agilent microRNA Human v2). miRNAs with significant differential expressions were identified and the results show that a total of three miRNAs (miR-136, miR-630 and miR-663) were found to be up-expressed in SCOS specimen and seven miRNAs (miR-15b, miR-18a, miR-25, miR-30a-5p, miR-34b, miR-93 and miR-126) were found to be down-expressed in SCOS specimens. Putative target genes of individual miRNA were predicted *in silico*. Target genes were assigned functions based on the "spermatogenesis-related" GO categories, and a total of 51 targets were identified. Of the three up-regulated miRNAs, miR-630 is most significantly up-expressed in testicular specimens of SCOS compared to normal testes. A total of 8 spermatogenesis-related targets of miR630 were identified including HMGCR, SPAM1, SPAG1, CRISP3, PSME4, TAC3, GNAS and SOX30. Of the eight targets, SOX30 revealed the most significantly decreased expression in SCOS testes compared to normal testes. Negative correlation between miR-630 and SOX30 transcript levels was observed. By luciferase assay, miRNA-630 decreased the SOX30 3' untranslated region (3'UTR) activity in HeLa cells, PC-3 cells and HEK293 cells. Addition of miRNA-630 mimics attenuated the SOX30 expression at both RNA and protein levels. In addition, addition of miRNA630 was able to inhibit the cell proliferation *in vitro*. Spermatogenesis relies heavily on post-transcriptional gene regulation, and defects in the transcriptional regulation could profoundly influence germ cell proliferation and differentiation, leading to germ cell apoptosis and SCOS. Given that SOX30 have been shown to be involved in the differentiation of male germ cells, our results suggest that aberrant expression of SOX30 modulated by miR-630 may contribute to one of the causes of male infertility.

【不孕症研討會】

基因甲基化和造精功能障礙的相關性

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Association between Gene Methylation Patterns and Spermatogenic Failure

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Male infertility factors contribute one half of infertile couples and the primary spermatogenetic failure remains a puzzle for decades. Spermatogenesis is well known for its complex and highly ordered processes from the spermatogonia to the spermatozoa. The investigation of single gene based on DNA sequences often offers limited explanation for clinical spermatogenetic failure. Further study regarding transcriptional/translational control of these sterility-related genes could serve to advance our understanding the mechanisms of spermatogenic failure in infertile men. With proceeding to the post human-genome-project era, there are accumulating evidences pointing out the crucial roles of epigenetic regulation in spermatogenesis but the landscape of the methylome in human testis is still lacking. With the powerful high throughput method- the Methylated-DNA IP-on-chip (mDIP) assay, we started to investigate the DNA methylation profiling in the testes of fertile and infertile men and their consequences. The preliminary data is very complex but encouraging. This study will be focused on narrowing down the candidate genes with potential epigenetic regulation targets. Moreover, we will validate them and try to acquire a better understanding of the epigenetic mechanisms involved in human spermatogenesis.

【不孕症研討會】

Overexpression of the X-linked TEX11 Gene may Contribute to the Spermatogenic Defects in Klinefelter Syndrome

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Klinefelter's syndrome (47, XXY) is a common genetic disorder due to aneuploidy with an extra X chromosome in the male genome. The principal defects are small testes and reduced fertility caused by the cessation of spermatogenesis. It has been suggested that over-expression of some genes located on the X chromosome contribute to this phenotype. However, the identities of these genes and the underlying mechanisms remain unknown.

Tex11 (Testis expressed gene 11) was originally identified by cDNA subtraction, a systematic search for genes expressed in mouse spermatogonia but not in somatic tissues. *Tex11* is located on the X chromosome and encodes a protein of 947 amino acids expressed predominantly, if not exclusively in male germ cells. Using a yeast two-hybrid system, we have identified an ESR (estrogen receptor)-interacting protein called HPIP (hematopoietic PBX-interactiog protein) which interacts with TEX11. HPIP can influence ESR-dependent rapid estrogen nongenomic signaling by acting as a scaffold protein to recruit ESR to form a nongenomic complex. Previous studies have indicated that estrogens regulate testicular function and development through ESRs. Here, using biochemical approaches and reporter assays, we found that TEX11 competes with ESRα (estrogen receptor α) for binding to HPIP. Releasing of ESRα from the nongenomic complex can increase the estrogen-dependent genomic activities, and at the same time, reduce the nongenomic activities of ESRα, resulting in a decrease in the estrogen-dependent cell proliferation rate of GC-1 cells (mouse spermatogonia cell line). These findings revealed a role for TEX11 in regulating estrogen-signaling responses in mammalian germ line and in the maintenance of spermatogonia. Overexpression of TEX11 may therefore be partially responsible for the germ cell loss observed in Kinefelter's syndrome patients.

【不孕症研討會】

Application of Microfluidic Device in Semen Manipulation

Chang Hong-Chiang
張宏江

In this presentation, we will introduce basics of fluid behavior at the microscale and highlight previous uses of this technology in the reproductive sciences. We will briefly introduce fabrication of devices and review initial studies that used microfluidics in sperm sorting and microinsemination. Last, we point out some limitations of this new technology and provide speculation on future directions and application of microfluidics in ART.

Microenvironment Fluid Behavior

Microfluidics deals with the behavior and manipulation of fluids that are geometrically constrained to a small scale. The precise features of microfluidics include small volumes (less than microLiter), small size, and low energy consumption.

Fluid at the scale of our normal environment is turbulent; particles within a stream of fluid move in an unpredictable pattern. Turbulent flow depends on certain fluid characteristics (viscosity, density, and velocity) and the geometry and size of the channel, leading to calculation of a value known as the Reynold's number. In the microscale level (channel diameters: 10^{-4}～10^{-7}m), the behavior of fluids are different from macrofluidic behavior, some interesting and unintuitive properties appear. The Reynold's number decreases and becomes increasingly dependent on fluid characteristics. Decrease of the Reynold's number below a threshold value leads to fluid flow in a laminar fashion. To the opposite of turbulent flow, laminar flow occurs when a fluid flows in parallel layers, with no disruption between the layers. The motion of the particles of fluid is very orderly with all particles moving in straight lines parallel to the pipe walls.

Flows with a low Reynold's number possess little or no momentum; thus, fluids within a microchannel respond quickly and reliably to changes in external forces. Simply put flow within microchannels becomes streamlined and predictable. In addition, at the microscale, two or more streams of laminar flow in contact with each other do not mix, except by diffusion of molecules across the interface of the streams. Many of these fluid characteristics at the microscale form the principles driving the interest in the use of microchannels for gamete and embryo manipulation.

Application for microfluidics:
The basic idea of microfluidic biochips is to integrate assay operations such as detection, as well as sample pre-treatment and sample preparation on one chip (Lab-on-a-chip). To date, the advances in microfluidics technology are molecular biology procedures for enzymatic analysis (e.g., glucose assays), DNA analysis (e.g., PCR, sequencing), and proteomics. The technique of microfluidics shows promise as an alternative for each step in the IVF process, e.g. sperm sorting and microinsemination.

Application in ART
The method of ART has shown promises in male infertility. Intracytoplasmic sperm injection (ICSI) and in vitro fertilization (IVF) are the most efficient treatments of ART. The quality of single sperm cell has been critically important for manipulating ICSI. Traditional techniques like swim-up and density gradient centrifugation emphasize the importance of pre-selection. However, these techniques are time consuming and do not avoid damage on sperm. Microfluidic devices were used to approach such problems. New sperm selection techniques are challenged to achieve rapid isolation of viable, functional spermatozoa from raw semen, in a manner that optimizes sperm recovery rate, minimizes trauma, and avoid oxidative stress.

I. Sperm isolation:
Ideal sperm isolation would involve a simple, rapid, and atraumatic method to obtain sufficient motile perm for use in either IVF or ICSI. There are several studies dealing with sperm sorting. As pointed out by (Cho et al., 2003), motile sperm will be separated by the ability of motile sperm to escape from the initial inlet streamline and collected in specific reservoir. Moreover, Seo et al. demonstrated the sperm-sorting chip based on phenomenon of motile sperm to orient them against flow in a specific flow velocity range (Seo et al., 2007). In addition, an observation of the sperm motion, behavior and interactaction with the device was done (Lopez-Garcia et al., 2008). They studied sperm and fluid motion in microchannels to better understand how sperm interacted with this flow occurs in the device. There is a threshold fluid velocity where sperm transition from traveling with the fluid to a regime in which the sperm can move independently of the flow. A significant population of sperm remained in the inlet well area; it was presumed that these sperm might have defects.

II. Microinsemination:
Microfluidics has been proposed to be a good device for IVF for a number of reasons. A microchannel can mimic the microenvironment of in vivo fertilization conditions than a culture dish or microdrop. The microfluidic channels can provide a nonturbulent bathing of gametes with fresh media throughout insemination and coincubation. Also the active microfluidic environment can setup a sperm-oocyte interaction, rather than the static conditions present in a culture dish or droplet. In addition, the laminar flow in

microchannel can deliver the sperm to each oocyte in our predictable manner, eliminating the randomness of sperm-oocyte interaction. Finally, the extremely small volumes of media in microchannel environments, require fewer sperm to achieve insemination concentrations equal to standard IVF with larger volumes.

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Fig.1 Passively driven integrated microfluidic system for separation of motile sperm, by the Cho BS et. al. From University of Michigan, Ann Arbor.

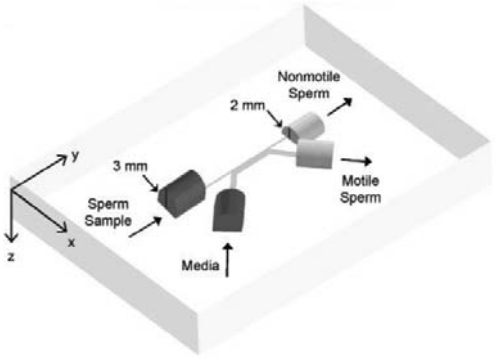


Fig. 2 A microfluidic device for male subfertility screening, by MC. McCormack, et. al. From Stanford University, Stanford. California.

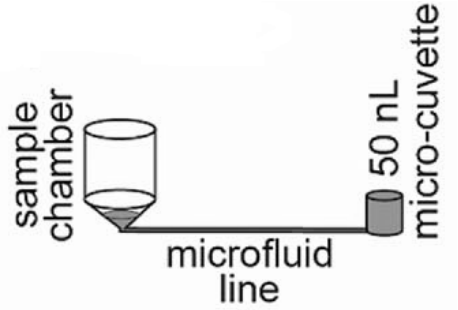
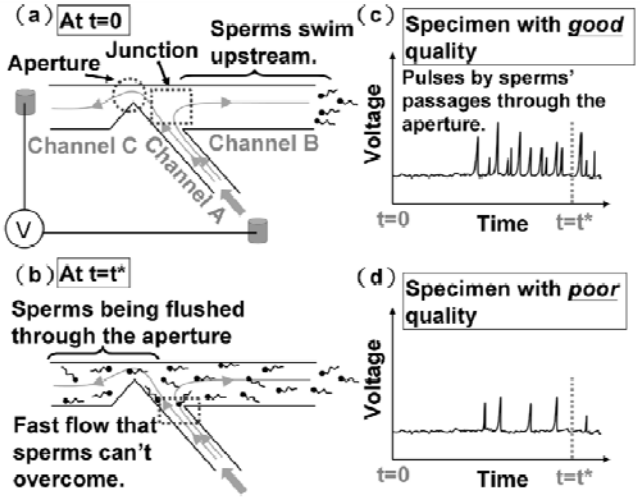


Fig. 3 Illustration of simultaneous evaluation of sperm motility and motile sperm concentration by the microdevice of home-use sperm quality chip. From NTUH research group.



【不孕症研討會】

A Comprehensive Analysis of Clinical Characteristics of Male Infertility in Taiwan
台灣地區男性不孕症臨床分析

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本研究採橫斷式回溯性調查法，樣本蒐集國九十七年一月至十二月為期一年，以立意取樣，由北台灣包括台大、榮總、北醫、新光等醫院及南部成大醫院，採用男性醫學會不孕小組所發展之男性不孕臨床簡式病歷為調查工具，內容包含 1.基本資料（年齡、身高、體重、配偶年齡、月經週期）、2.過往史（兒童期病史、個人疾病史）及個人史（抽煙、環境暴露、藥物使用）3.生殖系統理學檢查 4.精液分析 5.血液內分泌檢查 6.基因檢測 7.睪丸切片 8.診斷 9.治療計畫等。共蒐集 308 名樣本進行統計分析。

壹、 調查結果：

一、基本資料：本研究不孕症男性樣本為 308 名，年齡最年輕為 19 歲，最年長為 66 歲，平均年齡為 36.8 歲；配偶可分析樣本數為 148 名，年齡最年輕為 23 歲，最年長為 53 歲，平均年齡為 32.8 歲。以地理環境區分，北部地區平均年齡為 35.36 歲（N＝114，SD±5.96），南部地區平均年齡 38.17 歲（N=81，SD±6.82），P<.003 呈現顯著差異，南部地區不孕男性求診的年齡顯著高於北部。配偶年齡北部平均年齡 33.27 歲（N＝127，SD±5.54），南部 30.14 歲（N=21，SD±3.63），P<.002 呈現顯著差異。

不孕年數以 1 年及 2 年各佔 28%最多，其次是不孕 3 年佔 19%，不孕 5 年內求診佔 83.3%。

根據內政部統計，國人結婚年齡於民國 98 年男性初婚年齡為 31.6 歲，女性為 28.9 歲，均比 97 年增加 0.5 歲，其中新郎以 30～34 歲佔 36.9%最多新娘以 25～29 歲佔 43.75%最多。初婚年齡有逐年延後的現象，而女性生育年齡更是由十年前 25～29 歲的最高比率千分之 106，下降至 69，而 35～39 歲比率從千分之 21 升至 27（內政部，2011）。結婚年齡的延後加上年輕生育率的下降，不孕的問題不僅女性有許多壓力，男性與生殖相關的問題也被迫延遲發現，而影響不孕治療的成功率及懷孕的成功率。

二、過往史

針對患者在兒童時期曾經罹患之疾病、手術經驗，個人生活習慣如吸菸與生活中暴露在特殊環境或藥物使用。個人重大疾病、與泌尿科相關疾病史及與生產相關經驗等。

（一）在兒童期病史中有先天異常佔 2.8%、兒童期手術 8.5%（疝氣、陰囊水腫、睪丸未降、睪丸固定術）、腮腺炎 4.8%、手術或外傷 5.6%。（二）個人史的部分有抽煙的佔 14%，其中一天抽一包煙者最多，佔 13.3%、暴露於高溫或輻射者佔 8.1%、化學性暴露者佔 2.4%、有使用藥物（如賀爾蒙）佔 8.0%。（三）重大疾病以糖尿病患者比率 3.3%最多，其次是過去六個月發高燒 2.4%。（四）有 92.7%的人太太從未懷孕過。（五）泌尿科病史：有泌尿道發炎或性病史佔 7.9%，做過泌尿科手術者有 21.1%（疝氣 7.9%、精索靜脈曲張 7.4%、其他 5.8%）。（六）治療經驗：有高達 72.5%未曾因生育問題接受治療，接受與生育有關的治療則以西醫最多 23%、中醫 4.0%。

以上項目其中化學性暴露者、使用藥物（如賀爾蒙）、做過泌尿科手術者等三項其發生比率南北有明顯差異。

三、生殖系統理學檢查

項目有九項其不正常比率為：1.陰毛 4.1%、陰莖大小/勃起 1.3%、尿道口/包皮 0.3%、陰囊/皮膚 1.0%、睪丸大小 6.副睪/結節/囊腫 12.4%、輸精管 6.1%、有精索靜脈曲張 32.8%、男性女乳、體毛 2.8%。

上述項目中睪丸大小，以地理環境南北之分，其差異程度達顯著水準（表一），睪丸大小差異是否與檢查者之檢查依據標準有異，所導致結果誤差，值得進一步釐清。

表一　台灣地區南北部男性不孕患者睪丸大小之比較

項　目		平均數	標準差	t
右側睪丸	南	2.91	1.35	4.06***
	北	3.58	1.21	
左側睪丸	南	2.86	1.26	3.23***
	北	3.41	1.29	

* P<0.05　**P<0.01　***P< 0.001

四、精液分析

在調查樣本中，無精蟲症患者共 124 名，佔 39.7%；精蟲數少於一百萬隻，有 60 人，佔 19.2%；精蟲數 101 萬至 300 萬，活動力低於 30%、正常型態比率低於 30%者，有 52 名，佔 16.7%；其餘精蟲數超過 300 萬隻低於 1000 萬隻佔 9.2%，活動力超過 50%的佔 17.4%，正常型態比率高於 30%者，約有 17%。

五、診斷

以本調查工具中所列之診斷項目，將其發生率與理學檢查及精液分析做進一步的比較分析結果如下：

阻塞性無精蟲症(Obstructive azoospermia) N=46，15.3%、睪丸無精蟲症（Non-obstructive azoospermia）N=99，32.8%、與精索靜脈曲張相關者(Varicocele related)N=56，18.5%、睪丸未降/隱睪症（UTD/ Cryptorchidism）N=6，2.0%性腺機能低下（Hypogonadism）N=18，6.0%、基因問題(Genetic abnormality) 47XXY，N=16，5.3%；Y-deletion，N=14，4.6%、射精障礙(Ejaculation dysfunction) N=6，2.0%。

表二　各診斷與睪丸大小、精液分析及賀爾蒙之相關性

	阻塞性無精蟲症	睪丸無精蟲症	精蟲稀少 (Oligo-astheno-terato)	精索靜脈曲張相關	睪丸未降/隱睪症	性腺機能低下	基因問題	射精障礙
睪丸大小（左）	.183*	-.279**	.126*	.167**	-.175**	-.226**	-.144*	
睪丸大小（右）	.128*	-.279**		.148*	-.216**	-.296**	-.153**	
精蟲數		-.394**	.233**	.238**		-.129*	-.177**	
精蟲活動力	-.212**	-.482**	.254**	.279**			-.180**	
精蟲型態	-.147*	-.457**	.194**	.305**			-.132*	
FSH	-.145*	.181**	.192**		.372**	.158*		
LH	-.148*	.248**	.158*		.208**		.226**	
Testosterone						.337**	.210**	
Prolactine						.286**		.166*

1. 阻塞性無精蟲症：包含副睪阻塞、先天性雙測無輸精管、輸精管結紮後、射精管阻塞。與左右睪丸大小呈現正相關而與精蟲活動力、精蟲型態及 FSH、LH 呈負相關。

2. 睪丸無精蟲症（非阻塞性無精蟲症）包括 sertoli cell only、精蟲生長停滯、精蟲低度成熟。患有非阻塞性無精蟲症者其左右睪丸大小、精蟲數及精蟲活動力、精蟲型態呈負相關而與賀爾蒙 FSH、LH 呈現正相關。
3. 診斷為與精索靜脈曲張相關者，左右睪丸大小、精蟲數、精蟲型態、精蟲活動力呈現顯著相關性，而與賀爾蒙無相關性。
4. 睪丸未降/隱睪症，其左右睪丸大小呈負相關。與賀爾蒙 FSH、LH 呈現正相關，進一步比較分析與非此診斷者呈現顯著差異。
5. 性腺機能低下包括有 Kallman syndrome、神經系統手術、睪丸萎縮、泌乳激素亢進：其左右睪丸大小及精蟲數呈負相關，而賀爾蒙 LH、Testosterone、Prolatin 呈正相關，進一步比較分析與非此診斷者呈現顯著差異。
6. 基因問題（47XXY，N＝16，5.3%；Y-deletion，N＝14，4.6%)）：其左右睪丸大小、精蟲數及精蟲活動力、精蟲型態呈負相關，與賀爾蒙 LH、Testosterone 呈現正相關，進一步比較分析與非此診斷者呈現顯著差異。

五、結論

本次調查臨床樣本，將近一半是屬於阻塞與非阻塞性的無精蟲症患者約 48.1%，是屬嚴重之不孕症。不孕症決定因素相當多，目前仍無法由調查數據證實直接的原因，但由本次橫斷式流行病學的調查，呈現目前國內臨床男性不孕一個大概的輪廓，可作為臨床檢查項目的參照。

雖然缺乏本土相關對照值，只能以現有資料呈現相對值，儘管如此，此次調查仍務實地完成了我國男性不孕症的臨床現況，以目前的基本架構描繪，相信可為未來男性不孕的臨床調查的參考依據。

【不孕症研討會】

核磁共振影像診斷在先天無輸精管病人的研究進展

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MRI Study in Infertile Men with Congenital Absence of Vas Deferens

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Imaging of the seminal vesicles and intra-abdominal segment of the vas deferens for the diagnosis of congenital absence of the vas deferens (CAVD) was not well defined before the advent of modern imaging modalities. To provide accurate information and its further application for the diagnosis of CAVD by MRI and to explore its possible pathogenesis. The analysis of MRI images of seminal vesicles in the patients of congenital bilateral absence of the vas deferens (CBAVD) and congenital unilateral absence of the vas deferens (CUAVD) were compared to our previous experience with trans-rectal ultrasound examinations (TRUS). Thirty-six consecutive patients with CAVD had TRUS examinations of the seminal vesicles, 13 of them received further MRI evaluations. TRUS was performed using a 7.5-MHz transducer and images of the seminal vesicles were obtained and calculated in the transaxial plane. MRI studies were performed with a 1.5-7 superconducting system, T1 and T2-weighted axial, coronal, and sagittal imaging of the pelvis was obtained. If the seminal vesicles were present, then its size was measured for the morphological classification and diagnosis. All of the patients was also received *CFTR* gene mutation testing. In this study, MRI examinations proved that our previous TRUS examinations were not completely accurate for diagnosing CAVD. MRI allowed a more precise diagnosis of "hypoplasia of the seminal vesicle" and could detect the intra-abdominal segment of the vas deferens. It also demonstrated clear ectopia and fusion of the kidneys in a patient with CUAVD. Through our study of MRI, seminal vesicle agenesis is not well-associated with the presence of *CFTR* mutation in patients with CAVD. In conclusion, MRI can detect variable defects with great detail of the seminal vesicles and intra-abdominal vas deferens in patients with CAVD. It should be the choice for a definite diagnosis of the whole anomaly as CAVD, and especially needed before surgical exploration.

【不孕症研討會】

Effect of Varicocelectomy on Non-obstructive Azoospermia-meta Analysis

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Introduction: There are a few controversies regarding the treatment of varicocele on male infertility or subfertility (Evers et al, 2009; Will et al, 2011). Among them, whether varicocelectomy playing a role to recover sperm formation in nonobstructive azoospermia (NOA) is a major focus. The very first cases with varicocele-related azoospermia became fertile after high ligation were reported by Tulloch WS in 1955. The testis histology demonstrated a recovery of spermatogenesis after the operation (Tulloch, 1955). This article started the rationale of varicocele treatment for men with subfertility and even NOA. Herein, we collect the update evidences and opinions from the recent published literature to look for answers for the following clinical questions. 1. Does varicocelectomy help to recover sperm in the ejaculate for men with NOA? 2. Does varicocelectomy help to increase the rate of sperm retrieval at micro testicular sperm extraction (TESE)? 3. What is the indication for varicocele repair for patients with NOA? 4. Is prior testis histopathology helpful in determining whom might be beneficial from varicocele repair?

Weedin et al. (2010) recently reviewed the effects of varicocele repair in patients with NOA. The meta-analysis evaluated 233 patients in 11 studies (Matthews et al, 1998; Kim et al, 1999; Kadioglu et al, 2001; Caken & Altug, 2004; Schlegel & Kaufman, 2004; Esteves & Glina, 2005; Gat et al, 2005; Poulakis et al, 2006; Pasqualotto et al, 2006; Ishikawa et al, 2007; Lee et al, 2007) from the previous 20 years. After varicocele repair, 91 (39.1%) had motile sperm recovered in the ejaculate and 14 (6%) spontaneous pregnancies were reported. Histopathogical data were presented in 8 series, and success rates of sperm recover in patients with hypospermatogenesis (54.5%) or maturation arrest (MA) (42.1%) were significantly higher than in those with Sertoli cell-only (SCO) (11.3%). Patients with late MA (LMA) had a higher probability of success (45.8%) than those with early MA (EMA)(0%). The meta-analysis concluded that infertile men with NOA can have improvement in semen analysis and achieve spontaneous pregnancy after repair of clinical

varicoceles. Men with hypospermatogenesis and LMA have a higher probability of success. Therefore, histopathology is suggested helpful before varicocele repair in men with NOA.

A study of 83 NOA patients with varicocele by Youssef et al. also showed a similar result. Motile sperm could be found in ejaculate in 27 patients (34.2%) 7.4m after varicocele repair. Besides esticular histophatology, there was no predictive parameters of post-op improvement. Of the 27 patients, 13 (48.1%) had hypospermatogenesis, 8 (30%) had normal spermatogenesis, 6 (22.2%) had MA at spermatid stage and 2 (7.4%) had SCO.

Does varicocelectomy help to recover sperm in the ejaculate for men with NOA? The answer is yes. The probability of success to recover sperm in ejaculate distributed from 21 to 56%. The success rate had no relationship with grading of varicocele, sides involved or levels of gonadotropins. The only predictive factor is the pre-operative histopathologic pattern of testis.

However, Schlegel et at. reported a poorer outcome (2004). Of 31 men who underwent varicocele repair for documented NOA, 7/31 (22%) had sperm reported on at least one semen analysis post-operatively. However, only 3/31 (9.6%) men after varicocele repair had adequate motile sperm in the ejaculate for ICSI, without testicular sperm extraction (TESE). Sperm retrieval rates for men with varicoceles were not affected by a history of prior varicocelectomy. Men with clinical varicoceles that are associated with NOA will rarely have adequate sperm in the ejaculate after varicocele repair to avoid TESE. A history of prior varicocele repair does not appear to affect the chance of sperm retrieval by TESE for men with clinical varicoceles and NOA. The benefits of varicocelectomy in men with NOA is reported limited. Schlegel in this retrospective study showed varicocele treatment has no impact on the sperm retrieval rate. A 60% retrieval rate was achieved per TESE attempt regardless of whether varicocelectomy was done before attempted TESE. Schlegel's conclusion drew some critiques. Jarow commented on this study that one major flaw to this study may have led to an erroneous conclusion. Schlegel et al. used ultrasongraphy in the diagnosis of varicoceles, and they might include subclinical varicoceles, which were currently not recommended for repair according to update practice guidelines.

The study by Inci et al. had a result different from Shlegel et al. They included 96 men with NOA and clinical unilateral or bilateral varicocele, 66 underwent

prior successful varicocelectomy and 30 had any grade of varicocele at sperm extraction (Inci et al, 2009). Sperm retrieval rate was significantly higher in the treated group (53% vs. 30%; OR 2.63). There was no difference in the normal 2PN fertilization rate (63.9% vs. 53.6%). The rate of high quality embryos and number of transferred embryos, clinical pregnancy rate were all similar. In conclusion, varicocele repair significantly increased the sperm retrieval rate in patients with clinical varicocele and NOA.

In NOA, testicular histology is often heterogeneous, so a single biopsy is not always reflective of the overall function of the testis. Therefore, even if SCO is seen on a testis biopsy, spermatogenesis may be present elsewhere in the testis. There is a benefit of varicocele repair for men with NOA. However, the chance of varicocele repair obviating later TESE may be less than 10%. Clinically, a substantial number of patients in whom severe oligospermia is expected but complete azoopsermia was previously seen. On repeat semen analyses with centrifugation, rare sperm (adequate for ICSI) are often found when semen analyses are performed at a center that is oriented toward detection of severe oligospermia. The role of varicocele repair in NOA must be evaluated with controlled trials rather than observational studies of semen analyses after varicocele repair (Schlegel et al, 2011).

Testicular biopsied in 37 infertile men with clinical varicoceles and complete azoospermia showed hypospermatogenesis in 11, arrested spermatogenesis in 14 (5 at primary spermatocyte and nine at spermatid), and SCO in 12 (Saleh et al, 2011). Testicular histopathology did not correlate with varicocele grade or serum levels of FSH. The follow up data of 31 men with clinical varicoceles and NOA who underwent testicular biopsies and bilateral varicocele repair. Sperm recovery in the ejaculate was found in 10 (32%) of patients. Out of these 10 patients, 3 had hypospermatogenesis and 7 had spermatogenic arrest (4 at primary spermatocytes and 3 at spermatid). None of the patients with the SCO pattern had sperm recovered after varicocele repair.

In conclusion, a consensus needs to be reached on a rational approach to infertile men with varicocele-associated NOA. After testicular biopsy, varicocele repair can be offered to men with hypospermatogenesis and spermatogenic arrest. On the other hand, men with SCO pattern and those who failed to have sperm in their ejaculates after varicocele repair can be counseled to pursue microsurgical sperm retrieval.

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I-1

可在家測量活動精子的時代-一種嶄新的微流道精子計數器介紹及其準確性

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It is an Era for Men to Count Moving Sperms At Home - A Novel Microfluidic Sperm Counter and Its Performance

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Objective: To introduce a novel microfluidic-based motile sperm counter (MSC) and to compare MSC measurement with conventional sperm analysis (CSA) and Sperm Quality Analyzer (SQA IIC) in evaluation of male fertility.

Methods: The results of MSC were compared with the CSA and SQA IIC of 50 semen samples. The correlation coefficients (C.C.) were utilized for statistical analysis.

Results: There was good correlation between MSC and CSA (C.C. = 0.298, $p < 0.05$), MSC and SQA IIC (C.C. = 0.312, $p < 0.05$) and SQA IIC and CSA (C.C. = 0.364, $p < 0.01$).

Conclusion: The fabrication batch of this kind of microfluidics-based motile sperm counters provided good result correlation with CSA and SQA IIC. It is easy and accurate to use this motile sperm counter for counting moving sperms at home. It is an advance for screening and monitoring men's sperm motility at home.

Key words: Motile sperm count/Microfluidics/Male infertility/Lab-On-Chip/Home test

***I-2**

阻塞性無精蟲症的男性不孕症患者的疾病型態

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The Disease Pattern of Infertile Males with Obstructive Azoospermia

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Objectives: To evaluate the disease pattern of infertile males with obstructive azoospermia and compare the outcomes of management in obstructive azoospermia.

Materials and Methods: We retrospective analyzed 109 infertile men (mean age, 34 years; range, 24-78 years) with obstructive azoospermia from September 2003 to August 2010. They were evaluated by testis biopsy, scrotum sonography, hormone study including FSH, Testosterone, LH. We followed the management in obstructive azoospermia and outcomes.

Results: In 109 patients, 28 patients (25.7%) are congenital bilateral absence of the vas deferens (CBAVD), 21 patients (19.3%) received vasectomy before, 58 patients (53.2%) were idiopathic ductal obstruction (result from epididymal, vasal or ejaculatory origin), 2 patients (1.8%) with CUAVD. 59 patients (54.1%) received testis biopsy and 38 patients (64.4%) showed normal spermatogenesis, 21 patients (35.6%) showed presence of spermatogenesis or hypospermatogenesis. Mean left testis volume is 20.27 ml and right side is 20.57ml. 12 (11%) of 109 patients had varicocele as a co-morbidity. Hormone study was completed on 77 patients which revealed normal FSH level (mean 5.97 mIU/ml), normal LH level (mean 5.50 mIU/ml), normal testosterone level (mean 4.40 ng/ml). In CBAVD patients (total 28 patients), 27 patients received microsurgical epididymal sperm aspiration (MESA) and 1 patient received testicular sperm extraction (TESE). In the patients (21) ever received vasectomy before, 11 patients received vasectomy reversal, 9 patient received MESA and 1 patient received TESA.

Conclusions: Although azoospermia has many causes, approximately 40% of cases result from obstruction in the ductal system. In our study, idiopathic ductal obstruction (53.2%) is the most common cause of obstructive azoospermia and CBAVD is the second cause of obstructive azoospermia. Besides, normal hormone level and testis volume was found in our study. The clinical management of obstructive azoospermia depends on its cause and also must take into account any coexisting infertility factors in the female partner.

I-3

三例單側無輸精管病人的診療經驗

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Clinical Experiences of 3 Cases with Congenital Unilateral Absence of the Vas Deferens

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CUAVD in the infertile population is a heterogeneous disorder comprised of two distinct subgroups. One subgroup with CUAVD and CFTR mutation could be a variant of CBAVD. The other subgroup of CUAVD is not related to the CFTR mutation, some other embryological factors are responsible for the deficiency in one mesonephric. Unilateral renal anomaly may be associated with CUAVD and without CFTR mutation. Recently, we experienced 3 cases with CUAVD, the clinical diagnosis and management of them is as the following table:

Clinical Diagnosis	Genotype	TRUS				Seminal Vesicle MRI				Clinical Conclusion
		Vas deferens (Scrotal Part)		Seminal vesicle		Vas deferens (Intra-abdominal part)		Seminal vesicle		
		R't	L't	R't	L't	R't	L't	R't	L't	
Case1	$(TG)_{12}$ 5T / $(TG)_{11}$ 7T CUAVD*	Normal	Impalpable	Agenesis	Agenesis	Agenesis	Normal	Agenesis	Normal	CBAVD Variant
Case2	$(TG)_{12}$ 5T / $(TG)_{12}$ 7T CUAVD*	Impalpable	Normal	Agenesis	Normal	Normal	Normal	Normal	Normal	Iatrogenic Vasal ligation
Case3	$(TG)_{11}$ 7T / $(TG)_{12}$ 7T CUAVD*	Impalpable	Normal	Agenesis	Hypoplasia	Normal	Normal	Agenesis	Agenesis	CUAVD with ectopia and fusion of the kidneys

* All of the patients with CUAVD are azoospermic.

I-4

精索靜脈曲張的病患及精索靜脈曲張的大鼠其內精索靜脈缺氧蛋白增加

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Increased Expression of Hypoxia-inducible Factor-1alpha in the Internal Spermatic Vein of Varicocele Patients and Varicocele-Induced Rats

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Objectives: Varicocele, described as an abnormal tortuosity and dilatation of the gonadal veins within the spermatic cord, is a common anomaly in adolescent and adult males. Although varicocelectomy is a simple and safe technique, the recurrence of varicocele is still an issue. Hypoxia may play a role in varicocele-associated infertility. In this study we investigate whether the hypoxia occurrence in the internal spermatic vein (ISV) of varicocele patients and left varicocele-induced rats by detecting hypoxia-inducible factor-1 α (HIF-1 α) expression.

Materials and Methods: In human, the study group consisted of 12 patients with grade 3 left varicocele, and the control group consisted of 8 volunteers with left indirect inguinal hernia. Using a left inguinal surgical incision, a 1 cm section of ISV was resected from each patient in both groups. In rats, experimental left varicocele (ELV) was created by partial ligation of left renal vein as study group of 24 adult male Sprague-Dawley rats. The other 24 rats were as control group. Rats were killed at 2, 4, 8 and 12 weeks following varicocele creation. The samples were detected the expression of HIF-1 α by immunoblotting and immunohistochemical staining. Results were analyzed using Student's *t* test.

Results: In human, the HIF-1 α protein band was 10.92 ± 2.70 in the control group and 73.15 ± 8.93 in patients with varicocele (ie, 7-fold higher). In animal model, the relative intensity of HIF-1 α protein at 2, 4, 8 and 12 weeks was 51.14 ± 9.53, 65.94 ± 12.98, 70.38 ± 21.29, 66.07 ± 15.29 in the control group and 162.63 ± 16.77, 245.24 ± 37.02, 200.52 ± 33.36, 85.82 ± 26.09 in the varicocele group, respectively.

Conclusions: HIF-1 α expression in the ISV of patients with varicocele was significantly higher than in the control group. In animal model, HIF-1 α expression in the ISV of varicocele rats is significantly higher than in control group, especially at 2, 4, and 8 weeks after varicocele creation. These findings directly show that hypoxia related pathophysiological changes have occurred in the ISV of both varicocele patients and varicocele-induced rats. The hypoxia may have also occurred in their testicular tissues. Thus, it would be of interest to investigate whether decreasing HIF-1 α activation and testis hypoxia could reduce the recurrence of varicocele.

I-5

被誘發精索靜脈曲張的大鼠其兩側睪丸組織的 Caspase-3 表現（細胞凋亡）增加

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Increased Caspase-3 Expression (Apoptosis) of Bilateral Testicular Tissues in Varicocele-Induced Rats

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Objectives: Varicocele is recognized as a cause of male infertility. But the real mechanism is not clear today. We studied the apoptosis-associated proteins by detecting Bcl-2, caspase-9, caspase-8, and activated caspase-3 expressions in the bilateral testes of experimental varicocele-induced rats.

Materials and Methods: Experimental left varicocele (ELV) was created by partial ligation of left renal vein in study group of 24 adult male Sprague-Dawley rats. The other 24 rats were as control group. Eight rats from each group were killed at 4, 8, and 12 weeks following varicocele creation. Testicular tissues of both groups were sampled for TUNEL assay and immunoblotting.

Results: Increased apoptotic germ cell was found in the ipsilateral testis of varicocele group at 8 and 12 weeks after operation ($P < 0.05$). Increased activated caspase-3 expression in the contralateral (right) testis was noted at 12 weeks following varicocele creation ($P < 0.05$).

Conclusions: Our study demonstrates down-regulation of Bcl-2 expression and increased expression of caspase-9 and activated caspase-3 in the ipsilateral testis of ELV rats at 8 and 12 weeks, indicating gradually increased testicular tissues apoptosis through the intrinsic pathway in varicocele-induced rats. Simultaneously, increased activated caspase-3 in the contralateral testis was observed at 12 weeks ($P < 0.05$) following varicocele creation also. The mechanism of varicocele-associated infertility in human may be similar to these findings.

***I-6**

腫瘤壞死因子α誘發雄性大鼠生殖細胞之自噬作用

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Tumor Necrosis Factor α Induces Autophagy in Germ Cells of Male Rats

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Purpose: Autophagy, or autophagocytosis, is a different category of cell death, which involves the degradation of self-components via a lysosomal machenism. Autophagy is most commonly found to be induced by cytokine, hypoxia and starvation. Very few literature has addressed autophagy in spermatogenesis. We used a rat model to discuss the appearance and the effects of tumor necrosis factor α (TNF-α) on autophagy in mammal testis.

Materials and Methods: The testis of male Sprague-Dawley rats (8 to 12 week-old) were retrieved and the contents of the testes were transferred to a test tube for collagenase treatment (20 mg/ml). The seminiferous tubule components were separated from the interstitial cellular components by nylon mesh filtration. The tubular part (70 mg) was further incubated with exogenous TNF-α (0, 1, 5, 10, 20, 40 ng/ml) in 34℃ for 0 to 8 h. The protein was then extracted for anti-LC3 antibody Western blotting.

Results: The Western blot results showed a dose-dependent, not time-dependent expression of LC3. Interestingly, autophagy phenomenon decreased when TNF-α was at 5 to 10 ng/ml.

Conclusion: Based on our data, this is the first evidence that TNF-α is able to induce autophagy in germ cells of rat testis. This finding will pave the road to other studies of cytokine-related hormone derangement in male animals.

***I-7**

纖維母細胞生長因子受體第2型之異常表現與造精功能失調之相關

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Association of the Aberrant Expression of FGFR2 with Spermatogenic Failure

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Objectives: *Fgfr2* is a candidate sex determining gene. *Fgfr2* mutant XY mice lead to defects in testis cord formation, testicular dysgenesis and partial male-to-female sex reversal. This study was conducted to investigate the expressional profiling of human FGFR2 in the testes of fertile and infertile men and to study the relationships between testicular FGFR2 expressions and clinical variables.

Materials and Methods: The protein localizations of FGFR2 in the testes of fertile men and infertile men were determined by immunohistochemical staining. The mRNA transcript levels of FGFR2 in 5 obstructive azoospermic men with normal spermatogenesis, 12 infertile men with hypospermatogenesis, 3 infertile men with maturation arrest and 12 infertile men with Sertoli cell- only syndrome were determined by quantitative real-time PCR. Pearson product moment correlation coefficients were calculated to determine the correlation between the FGF9 transcript ratios and the clinical variables, including hormone profiling and testicular volume.

Results: FGFR2 protein was abundantly expressed in Sertoli cells, lamina propria of seminiferous tubule and Leydig cells. Sub-dividing our patients into four groups according to the severity of testicular histopathology produced a progressive decrease in the *FGFR2* mRNA transcript ratios (FGFR2/HMBS) ($P = 0.0018$, Kruskal-Wallis test). Pairwise comparisons of the *FGFR2* mRNA transcript ratios among the 4 groups revealed that there were significant differences between the normal spermatogenesis group and the SCOS group and the hypospermatogenesis group and the SCOS group ($P < 0.01$; $P < 0.05$, respectively, Tukey test). *FGFR2* transcript levels were positively correlated with testicular volumes ($r = 0.468$; $P = 0.012$), serum testosterone (T) levels ($r = 0.781$; $P < 0.0001$) and T/LH ratios ($r = 0.597$; $P = 0.001$). On the other hand, *FGFR2* transcript levels were found to negatively correlated with serum FSH levels ($r = -0.466$; $P = 0.012$) and LH levels ($r = -0.403$; $P = 0.034$).

Conclusions: Our results show that infertile men are found to have decreased expressions of testicular FGFR2 and FGFR2 transcript levels are positively correlated with testicular volume, suggesting that FGFR2 should play crucial roles in male infertility and postnatal gonadal development. The protein localization of FGFR2 suggests its functional roles in testicular spermatogenesis and steroidogenesis.

***I-8**

雄性大鼠之睪丸內睪固酮是否有日間週期之變化?

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Does Mammalians' Testicular Testosterone have Diurnal Variation Phenomenon?

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Purpose: It is well known that serum testosterone (T) has a circadian rhythm, but inside the testis, whether intratesticular testosterone (IT-T) has the same phenomenon is less studied. We here compare serum T and IT-T in rats for a 24-h period with the purpose to understand if IT-T has a circadian rhythm.

Materials and Methods: We decapitated male Sprague-Dawley rats every 2-h for a 24-h period started from 8AM (n=3~4 in each time spot). The blood samples were retrieved. Removed testes were decapsulated and interstitial fluid filtrated with fine nylon mesh and collected. LH was also measured for each blood sampling time. The serum LH, T and IT-T concentrations were measured by radioimmunoassay (RIA).

Results: The serum T and IT-T has similar diurnal variation pattern with the highest levels at 2AM and 8AM, the lowest levels at 2PM and 8PM. IT-T level was 100~400 folds higher than that of serum T. The elevations of T both in serum and testis were all followed by the secretion of LH. The correlation of serum T and IT-T was significant ($r=0.86$, $p<0.05$).

Conclusion: Based on our data, IT-T has the same circadian variation with serum T under the regulation of hypothalamo-pituitary-testicular axis. Therefore, the circadian characteristics of IT-T should be taken into consideration when it is used to compare with other reproductive functions.

***I-9**

Platonin 對於老鼠睪丸扭轉及去扭轉之治療作用

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The Therapeutic Potentials of Platonin in Rat Model of Testicularlar Torsion-detorsion

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Objectives: Testicular torsion is a serious and devastating problem that most commonly seen in adolescent males. Testicular torsion may induce testicular atrophy and subfertility. However, the therapeutic potential of platonin in attenuating ischemia-reperfusion (IR) injury in testicular torsion-detorsion has never been explored. Our hypothesis is that platonin can attenuates the IR injury in rats with testicular torsion-detorsoion.

Materials and Methods：A total of 36 adult male Sprague-Dawley rats were used. The rats were divided into 6 groups (Sham+N/S, Sham+Platonin, Torsion 4 hours/detorsion 4 hours+N/S, Torsion 4 hours/detorsion 4 hours+Platonin, Torsion 4 hors/detorsion 24 hours+N/S, Torsion 4 hours/detorsion 24 hours+Platonin). Testicular injury score, epididymal sperm characteristics and inflammatory assay were used.

Results：The platonin can reduce the testicular inflammation and tissue injury. Myeloperoxidase activity and malondialdehyde in testes in the torsion-detorsion-platonin group were significantly lower than in the torsion-detorsion group.

Conclusions：Platonin protrcted testes from IR injury after testicular torsion and detorsion. Long-term effect for the reduction the possibility of infertility should be evaluated in the future.

P-1

患有勃起功能障礙之中年男性有較顯著之儲尿性下泌尿道症狀

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Storage Lower Urinary Tract Symptoms are Pronounced in Middle-aged Men with Erectile Dysfunction

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Objectives: Lower urinary tract symptoms (LUTS) and Erection (ED) are extremely prevalent in aging men. The results of several large-scale studies have shown a consistent and strong relationship between LUTS and ED but storage and voiding symptoms have different bothersome impacts for aged male. The objective of this study was to assess the correlation of erectile dysfunction and LUTS subtypes in different age groups.

Design and Methods: A total of 210 men visited our clinic for erectile dysfunction was investigated and 132 patients were included in the final data. The International Prostate Symptom Scores (IPSS) including storage subscore and voiding subscore, International Index of Erectile Function-5 (IIEF-5), serum testosterone level of patients were reviewed and analyzed by paired t test and Pearson correlation coefficients.

Results: The mean age was 57.2 years. The Pearson correlation coefficient was -0.267 ($P=<0.001$) in IIEF and IPSS total score, -0.2 in voiding subscore and IPSS score ($p=0.01$), and -0.312 in storage subscore and IPSS score ($p<0.001$). But after stratification by age, significant negative correlation was both found in storage and voiding subscore to IPSS score ($r=-0.322$, -0.368; $p=0.044$, 0.024) in age older than 60 years old. Significant negative correlation was found between storage subscore and IPSS score in age 50-59 ($r=-0.299$; $p=0.009$) and age younger than 50 ($r=-0.301$; $p=0.026$), but no correlation for voiding subscore in age 50-59 ($r=-0.059$; $p=0.326$) and age younger than 50 ($r=-0.237$; $p=0.065$). Serum testosterone did not correlate to IPSS and IIEF-5 scores ($p>0.05$).

Conclusions: Although LUTS and ED have a strong association at previous clinical study and pathophysiologic hypotheses, our results revealed storage urinary tract symptoms are more closely related to erectile dysfunction than voiding symptoms in middle-age men. In the group of age over 60 years. There are significant negative correlation for both subscores with IIEF.

P-2

老年男性之下泌尿道症狀與生活型態、攝護腺體積及代謝症候群之相關性

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Associations of Lower Urinary Tract Symptoms with Lifestyle, Prostate Volume, and Metabolic Syndrome in Aging Males

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Objectives: The purpose of this study was to determine the influence of lifestyle, prostate volume, and metabolic syndrome (MS) on lower urinary tract symptoms (LUTS) in aging males.

Materials and Methods: A total of 764 men aged 40 and more were enrolled. The International Prostate Symptom Score (IPSS) questionnaire was used to assess the severity of LUTS. MS was defined according to the modified criteria developed by the Bureau of Health Promotion in Taiwan. Lifestyle factors, prostate volume, and components of metabolic syndrome were compared between no/mild and moderate/severe LUTS. Multiple logistic regression analysis was used to determine the independent predictors of moderate to severe LUTS.

Results: The mean age of the study population was 56.5 ± 6.3 years, with an average IPSS of 9.6 ± 7.0. The presence or the components of MS were not associated with the severity of LUTS, but different independent factors were detected in men with/without MS. The age, prostate volume, cigarette smoking, alcohol consumption, and physical activity had significant correlation with the severity of LUTS ($p = 0.001$, < 0.001, <0.001, 0.02, and 0.03, respectively). In multivariate analysis, the difference in age, prostate volume, cigarette smoking, and regular physical activity remained significant.

Conclusions: In Taiwanese males, aging, larger prostate volume, cigarette smoking, and lack of exercise were independent predictors of moderate/severe LUTS. MS did not have a direct impact on LUTS. In men without MS, prostate volume seemed to be a rather important factor of LUTS. Regular physical activity may be beneficial for LUTS, especially in men with MS. Our results suggested healthy lifestyle can lessen the severity of LUTS in aging males.

***P-3**

台灣侷限型攝護腺癌患者接受攝護腺切除術之 PARTIN TABLE

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"PARTIN TABLE" for Taiwanese Patients with Prostate Cancer

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Purpose: Partin Table, proposed by Dr. Allen Partin, is a nomogram of prostate cancer to predict the likelihood of status of organ confinement based on pre-operation parameters from the archival data of Johns-Hopkins Medical Center. After its first publication, there are a few update in these years. Since the data was majorly from a cohort of Caucasian, the predictive value of this Table for the Asian people is questionable. The incidence and mortality rate of prostate cancer are increasing in Taiwan. We tried to determine a Taiwanese version of "Partin Tables"**.**

Materials and Methods: From 2000 to 2010, there were 458 patients with clinically localized prostate cancer underwent radical prostatectomy at our hospital. Of them, 383 patients had complete data to be analyzed. Area under (AUC) receiver operation characteristic (ROC) curve was used to judge the accuracy of our proposed Table.

Results: External validate the Partin Table (version 2007) with our database, the AUC were 0.707, 0.579, 0.689, and 0.798 in OC, extra-prostatic extension, seminal vesicle invasion, and lymph node invasion, respectively. Predictive accuracy of our Table for the younger patients was better. A modified form of "Partin Table" was established according to our own database. There are some major different characteristics in our new Table from the Partin's, ie, (1) our cohort include Asian only, (2) our patients had higher PSA levels in the corresponding stage.

Conclusions: The demographic background of Taiwanese patients with prostate cancer is different from that in the United States. When using the conventional Partin Table to predict the resectioness of prostate cancer for the Taiwanese patients, we might miss some the chance to cure by prostatectomy. Our updated domestic nomogram table for prostate cancer has shown good predictive values.

***P-4**

攝護腺癌使用傳統腹腔鏡攝護腺根除手術之經驗

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Conventional Laparoscopic Radical Prostatectomy for Localized Prostate Cancer, Single Center Experience

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Objectives: Analyze our experience of conventional laparoscopic radical prostatectomy for localized prostate cancer in recent years.

Materials and Methods: We retrospectively collected and analyzed 51 consecutive patients from Dec 2003 to Sep 2009 whom were diagnosed with localized prostate cancer by transrectal ultrasound guided prostate biopsy (TRUS biopsy) or transurethral resection of prostate incidentally and underwent conventional transperitoneally laparoscopic radical prostatectomy in our institute. Demographic data, perioperative and pathologic results and post-operative complications of all patients were analyzed in detail.

Results: The mean age of all patients is 71.2±5.9 years old. All patients are diagnosed as prostate cancer by TRUS biopsy except one by TURP. The mean value of initial PSA, prostatic volume and operative time are 14.3±20.6 ng/ml, 33.7±21.4 ml and 451±172 minutes, respectively. Eight (15.7%) patients received TURP previously and there is no correlation between previous TURP and operation time (p=0.13). Seven (13.7%) patients received blood transfusion during operation due to larger amount of blood loss. The percentage of pathologic T stage as 0, 2a, 2a, 2c, 3a and 3b are 2, 21.6, 17.6, 7.8, 37.3 and 13.7% respectively. The percentage of Gleason score upgrade and downgrade are 39.2 and 15.7%. The rate of positive surgical margin is 41.2% (pT2: 3.9%, pT3: 37.3%). The average of removal of urethral Foley and post-operative hospital stay are 8.6±5.6 and 10.1±6.0 days, respectively. Thirty- eight (74.5%) patients has urinary incontinence after removal of urethral Foley and most patients recover gradually except one with artificial sphincter implantation. The rate of complication and anastomotic stricture are 7.8 and 3.9%.

Conclusions: Conventional laparoscopic radical prostatectomy for localized prostate cancer is technically feasible and safe.

P-5

台灣目前實行經根除性攝護腺癌切除術後性功能重建情形

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Practice Patterns of Post-radical Prostatectomy Penile Rehabilitation in Taiwan

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Objectives: Despite the concept of penile rehabilitation (PR) following radical prostatectomy (RP) is accepted and practiced widely, there is less report about the practice pattern in urologists, especially in Asia.

Materials and Methods: Members of Taiwan Urological Association were invited to participate in a survey. Demographic factors, current practice status, and opinions regarding post-RP erectile dysfunction (ED) and PR were obtained.

Results: One hundred and seventy (24%) of seven hundred urologists replied the questionnaire. Fifty-four responders (32%) had treated ED in patients after RP, including 1% used phosphodiesterase type 5 (PDE5) inhibitors only, 3% used intracavernosal injections (ICI) only, and 55% used combined oral PDE5 inhibitors and ICI treatment. Around 80% responders reported that the response rate to oral PDE5 was less than 50%. However, only 29% of them had performed some form of PR after RP although PR was known by most of them. PDE5 inhibitors combined with or without ICI were used in most PR. Sixty-six percent performed PR within 3 months, and 50% percent performed PR twice to three times per week. Around half reported 50 to 70% response rate while the remaining reported 25 to 50% response rate.

Conclusions: Among TUA members, post-RP PR is less widely practiced than western countries. The most common PR methods were PDE5 inhibitors with or without ICI.

***P-6**

去勢阻抗性攝護腺癌接受 Docetaxel 治療的臨床成效：高醫經驗

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Clinical Outcomes of Castration Resistant Prostate Cancer Patient Treated with Docetaxel in KMUH : A single Institution Experience

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Objectives: To evaluate the clinical outcome of castration resistant prostate cancer patient treated with Docetaxel in KMUH.

Methods: From Feb 2007 to Oct 2010, a total of 17 castration resistant prostate cancer cases with systemic Docetaxel treatment (Dose : 80～100 mg/M^2) in KUMH were analyzed. All patients provided their demographic data and received detailed physical examination and biochemical evaluation before treatment and during follow-up. The change of serum PSA level and survival time of all patients were analyzed.

Results: The average course of systemic Docetaxel treatment was 5.8 ± 1.2 times (range: 4-7). The PSA before treatment was 420.1 ± 587.9 ng/ml. After treatment, PSA decreased more than 50% was found in 10 patients (58.8%), and PSA nadir was 118.5 ± 139.1 ng/ml. The mean survival time of all patients was 11.7 ± 5.5 months (range: 6-24).

Conclusions: Systemic Docetaxl treatment could provide good PSA response rate and survival time in castration resistant prostate cancer patients. Further large studies are still needed to confirm our preliminary results and evaluate factors which could predict the treatment outcome.

***P-7**

攝護腺小細胞癌--4 個案例報告文獻回顧

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Small Cell Carcinoma of Prostate -- 4 Cases Report and Literature Review

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Prostate small cell carcinoma is a high grade malignant neoplasm with neuroendocrine differention and accounts for only 0.5%～2% of all prostate cancer. Unlike patients with prostate adenocarinoma, prostate small cell carcinoma patients usually don't have elevated PSA. Small cell carcinoma produces lytic bone lesion, which is different with dense blastic metastases caused by adenocarcinoma of prostate. Only half of the patients have small cell carcinoma as initial presentation, 1/4 of cases were mixed with prostate adenocarcinoma and the other 1/4 of cases presented adenocarcinoma at the beginning and recur as small cell carcinoma after hormone therapy for a period of time.

During 2003 to 2008, 4 cases of small cell carcinoma of prostate were collected, disease onset age was 59,61,74,84 y/o. Initial presentation include urinary difficulty, bone pain and gross hematuria. 1 patient had mixed tumors of both small cell carcinoma of prostate and adenocarcinoma, 2 had pure adenocarcinomas that recurred as small cell, and 1 had pure small cell.

Diagnosis was made by TURP in 3 cases and transurethral biopsy of prostate in 1. Time from diagnosis to mortality was 6,10,15 months in 3 patients and one remain living after diagnosis for 57 months. PSA before diagnostic procedure was 11.6, 1060, 72.8 and 35.7. Noticeably, the only surviving patient was diagnosed small cell carcinoma after TURP due to low urinary tract symptoms, PSA prior to operation was 0.11 ng/ml, and he received chemotherapy with Cisplatin + VP-16 for 5 courses.

Conclusion: Patients with prostate adenocarcima should receive palliative operation if having obstructive symtoms, because pathology may provide information of possible neuroendocrine differentiation to small cell carcinoma. Proper chemotherapy after diagnosis of small cell carcinoma of prostate may have survival benefit.

***P-8**

尿道切開術在反覆性尿道狹窄的病患中具有高失敗率：這種治療方式足夠嗎？

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High Failure Rate in Patients with Recurrent Urethral Stricture under Optic Urethrotomy: Is that Enough?

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Objectives: We evaluated the success rate of direct vision internal urethrotomy (optic urethrotomy) as a treatment for recurrent male urethral strictures.

Materials and Methods: A retrospective chart review was performed on 276 male patients who underwent repeated urethrotomy (more than once) from January 2001 through August 2010. We collected the data of patients, including gender, age, etiology of urethra structure, position of urethra stricture, underlining disease, unset of urethra stricture. The Kaplan-Meier method was used to analyze stricture-free probability after the first, second, third, fourth and fifth urethrotomy.

Results: Data were available for 172 patients. All patients are male. Mean patient age was 76.6 years old (range 67 to 98). All patients received more than once urethrotomy. The leading cause of urethral stricture was surgical related (83.2%). The occurring site of strictures (n=160) were respectively in the bulbar urethra (n=69), penile urethra (n=55), penile bulbar urethra (n=33), fossa navicularis (n=5) and . Overall mean follow-up period was 98 months (range 24 ~ 204). The first onset of urethral stricture was about 8 months after surgical procedure in the surgical related group. The stricture-free rate after each urethrotomy was 2nd 63%, 3rd 21%, 4th 18%, and 5th 13%, respectively. The median period of each surgery to receive next urethrotomy was 2nd 25.3, 3rd 10.6, 4th 8.2, and 5th 4.6 months, respectively.

Conclusions: Urethrotomy is a most acceptable and simple treatment for male urethral strictures. However, the outcome characteristics are not as good as in the treatment of recurrent urethral stricture patients. In our series, success rate of traditional optic urethrotomy was 63% in second urethrotomy but dropped below 30% after third urethrotomy. Consequently, traditional optic urethrotomy may not be the optimal methods for those patients with recurrent urethral stricture (more than twice).

S-1

熟女假高潮和不愉悅性經驗之關聯性調查

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A Survey of Women Fake Orgasm and Its Correlation with Unpleasant Sexual Experiences

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Background: Research shows that many women fake or "pretend" orgasm, but little is known about whether their erectile dysfunction (ED) couples also play a major role on this matter. The purpose of this study was to survey whether, how, and why women pretend orgasm and what women's reports of fake orgasm reveal about their sexual scripts and the impact on their relationship.

Materials and Methods: This was a self-completion study and all participants completed a qualitative questionnaire anonymously via internet. The study included 400 women with the age of 30 to 60 years old from north to south Taiwan. All the women had experienced penile-vaginal intercourse (PVI). The overall satisfaction for sexual experiences, including intercourse frequency, fake orgasm episodes, and sexual quality, was evaluated. The reasons of pretending orgasm and its correlation with sexual partner's penile length (or girth) and penile rigidity were also studied.

Results: 43% women reported fake orgasm during PVI-experience. Around 51% of participants had sex at least once a week. Frequently reported reasons were that orgasm was unlikely, they wanted sex to end, and they wanted to avoid negative consequences (74%) (e.g., hurting their partner's feelings) and to obtain positive consequences (e.g., pleasing their partner). The intercourse frequency was not correlated with the quality of orgasm. 62% women reported whether their orgasm was induced deeply depended on their couple's penile rigidity. 83% participants complained that the major cause of difficult to achieve orgasm was due to poor techniques of their couples. It is more difficult to achieve orgasm during PVI when their sexual partner's age increased and that correlated with the high prevalence of ED. There was no correlation between female fake orgasm with their sexual partner's penile length (or girth) but correlated with erectile hardness and duration.

Conclusion: The prevalence of fake orgasm is high in women and ED couples play a major role on it.

S-2

女性紅斑性狼瘡病患的性功能障礙

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Female Sexual Dysfunction in Women with Systemic Lupus Erythematosus

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Objectives: Systemic lupus erythematosus (SLE) is a chronic autoimmune disease, affecting women's all systems during reproductive age. Female sexual dysfunction (FSD) was seldom assessed in women with SLE. Our aim was to evaluate the prevalence of FSD in women with SLE and compared it with normal group.

Materials and Methods: Three hundred and eleven (311) consecutive woman outpatients with SLE signed the written informed consent and answered a questionnaire composed of the Female Sexual Function Index (FSFI), and the Female Sexual Distress Scale (FSDS). Their charts were reviewed for relevant clinical data. Their FSFI scores were compared with those of 930 woman employees of two hospitals. FSD was defined by the FSFI and the FSDS. Comparison of sexual difficulty in individual domains defined by the FSFI domain scores was done between the women with SLE and the controls. The Independent Review Board reviewed and approved this study.

Results: Among the 282 respondents, 175 women who had some level of sexual activity during the previous month were eligible for analysis with a mean age of 37.6 years (range 21-71). Of them, 50.3% (88/175) had sexual difficulty in one or more domains, including low desire in 30.5%, low arousal in 25.9%, low lubrication in 13.3%, low orgasm in 13.1%, low satisfaction in 9.2% and sexual pain in 19.0%. When compared with the controls (n=930), after adjusting for age group, marital status, and menstrual cycle, women with SLE had a higher prevalence of low lubrication (OR 2.35, 95% CI: 1.30-4.23) and sexual pain (OR 1.75, 95% CI: 1.10-2.77). There was no significant difference between the prevalence of sexual difficulty in other domains between them.

Conclusions: Female SLE patients had more sexual difficulties in lubrication and sexual pain but not in other areas than the controls.

***S-3**

經由門診處方比較三種磷酸二酯酶-5 抑製藥物之使用狀況

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Comparison of Outpatient Prescriptions in Phosphodiesterase-5 Inhibitors Sildenafil, Vardenafil and Tadalafil

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Background: It is convenient and accessible to the general public in Taiwan for the consultation at outpatient because of the National Health Insurance. However, people have to pay by themselves for the medication, phosphodiesterase-5 inhibitors （PDE5i）when erectile dysfunction was impressed. We can evaluate the value of capability/price to the patients in the past decade by comparison of outpatient prescriptions in 3 kinds of PDE5is.

Methods: The outpatient prescriptions of sildenafil, vardenafil and tadalafil in our hospital, from Jun 1st 2000 to Apr 30th 2010, were collected in our hospital, including the patient information, dosage.

Results: There were 5618 patients received the 18224 prescriptions. Individual total proportion of sildenafil, vardenafil and tadalafil were 89.71% (0.70% for 25mg, 38.99% for 50mg, 50.01% for 100mg), 7.01%, 3.27%. Of the 5618 patients, 3209 (57.11%) came for the prescription for single time, and 26.13% came for long-term refilling (more than 3 times). In the group of long-term refilling, the follow-up time was 819.60 ± 826.16 days (mean ± SD). Comparing the first and the last prescription of each patient, 94.89% took sildenafil at first and 89.23% of them kept the same kind of medicine. 27 (58.70%) in the vardenafil group and 13 (44.83%) in the tadalafil group, revealed the same condition.

Conclusion: Around 60% of the patients who came to outpatient and took medication just for instant interest. Sildenafil is the first clinical introduced PDE5i, and most common for the first attempt or long-term refilling. More than 80% of patients taking sildenafil do not change their prescription.

***S-4**

Trazodone 在台灣泌尿科病人上的使用情況研究

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A Nation-wide Population Study of Trazodone Use in Urological Patients

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Objectives: Erection dysfunction (ED) has been a prevalent disease worldwide. In a recent report, the prevalence of ED is estimated to be 27% among Taiwanese men older than 40 years old. Trazodone is a 2nd generation antidepressant found in the 1960's and was approved by Food and Drug Administration (FDA) in 1981, it is an antidepressant of the serotonin antagonist reuptake inhibitor (SARI) class. Some evidence has suggested that trazodone may be helpful in improving the sexual dysfunction, especially arousal problem. Though in controversy, it is sometimes off-label used for erectile dysfunction or arousal problem in urological patients. To have a global view of this off-label use in Taiwan, a nation-wide cross-sectional analysis of urological use of trazodone was done using the National Health Insurance Research Database (NHIRD).

Materials and Methods：1/500 randomly-sampled outpatient visits dataset in NHIRD were used to estimate the total and urological prescription visits of Trazodone, stratified by year. Then 1-million randomly-selected dataset issued in 2005 was used to analyze the refill rate and the age at 1st prescription and the diagnoses assigned to the prescription visits.

Results：As expected, the prescription visits in urology were almost exclusive of female patients. The prescription increased rapidly since 1998, maintained till 2003, and then declined gradually, corresponding to the marketing of three phosphdiesterase-5 (PDE-5) inhibitors. The diagnoses assigned to the prescription visit were mostly impotence-associated diagnoses, accounting for about 55%, while depression-associated diagnoses accounted for less than 13%.

Conclusions：Trazodone use in urological field is an existing fact in Taiwan, mainly used for ED, and there was a trend correlated and influenced by the marketing of three PDE-5 inhibitors between 1997 and 2008. The prescription of trazodone was more prevalent and regular for the elderly, instead of young patients.

S-5

台灣從 1999 至 2009 年勃起功能障礙治療方式使用資料

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Utilization of Treatment Modalities for Erectile Dysfunction in Taiwan, 1999-2009

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Objectives: More information about treatment utilization data for erectile dysfunction (ED) is needed for clinician. We reported these data from 1999 to 2009 in Taiwan and from our institution.

Materials and Methods: The national sale data of phosphodiesterase type 5 (PDE5) inhibitors and Caverject® came from Intercontinental Marketing Service in Taiwan and penile implant from the trading company. Demographic data of ED patients at our institution was obtained from chart review.

Results: The national sale data of PDE-5 inhibitors increased by 2.6-fold from 237,326 packs (each containing 4 tablets of products) in 1999 to 854,940 in 2009. Sales of PDE-5 inhibitors from drugstores accounted for the biggest proportion, increasing from 62.2% of all in 1999 to 93.5% in 2009. Of the three agents, Viagra® had the highest market share around 70%. The national sale data of Caverject® (around 8000～10,000 box/yr) and penile implant (30-70 sets/yr) did not grow in the past decade.

A total of 4,149 (59.7 yrs) patients had treatment with PDE-5 inhibitors and 374 (62.5 yrs) with Caverject® and 100 (65.6 yrs) with penile implant in the past decade at our institution. Mean age of new users of PDE-5 inhibitors decreased gradually from 65.1 y/o in 1999 to 52.1 y/o in 2009 and so did the number of new users, dropping from 792 in 1999 to 172 in 2009. For prescribing PDE-5 inhibitors, Urologists (86.5%) were the most, followed by Family Physicians (5.4%) and Endocrinologist (3.2%). The drop-out rate for PDE-5 inhibitor and Caverject® users both reached 90% in 3-yr. Penile implant recipients had a significantly higher prevalence of comorbidities, including hypertension, diabetes, dyslipidemia, and history of prostate cancer and Peyronie's disease, when compared with Caverject® and PDE-5 inhibitor users.

Conclusions: The national sale data of PDE5 inhibitors increased several fold in the past decade confirmed their advantages and safety profile in treatment. The use of injection and implant did not meet the expectation that herald more education.

S-6

男性尿道戀合併安非他命濫用

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Male Urethralism Combined with Amphetamine Abuse

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Objectives: Urethralism is sexual activity that involves sexual stimulation of the urethra predominantly seen in males. The present study is to report a 48-year-old male patient presented with urine leakage from inguinal region due to urethralism combined with amphetamine abuse.

Methods: The case was investigated for causes of repeated retention of intravesical foreign bodies by clinical sexual history and self-administered questionnaires, including International Index of Erectile Function and Male Sexual Health Questionnaire-ejaculatory function domain Short Form.

Results: The patient was a married 48-year-old male trucker. He presented our emergency room on account of continuous urine leaks from inguinal region. He had lost two ball-pen refill and one crochet into urethra for sexual gratification in the past year. Exposure to amphetamine was started at age of 24 yrs. Continuous exposure to amphetamine through 'in runs" smoking lasted for 1-2 days in accompany with urethral stimulation with foreign bodies. He has been admitted to our hospital for retrieval of intravesical foreign bodies for 9 times from 2000 to 2010. He was afflicted with severe degree erectile dysfunction and ejaculatory dysfunction.

Conclusions: Urethralism is liable to introduce foreign bodies retention in urinary bladder. Combined use with illicit drug should be considered in the treatment of patients with urethralism.

S-7

尿液神經生長因子在第二型糖尿病小於四十五歲男性會上昇同時和勃起功能嚴重度有相關但和下泌尿道症狀無關

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Urine Nerve Growth Factor Levels are Elevated in Type 2 Diabetic Patients Aged Less Than 45 Years Old and Correlated with the Severity of Erectile Dysfunction But Not Lower Urinary Tract Symptoms

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Objectives: Urinary nerve growth (NGF) levels have been found to be higher in patients with overactive bladder (OAB) compared with normal controls. Diabetic patients have more OAB symptoms and erectile dysfunction (ED) in the early stage of diabetes. We measured the urinary NGF levels and to correlate the OAB symptoms and erectile dysfunction in type 2 diabetic male patients aged less than 45 years.

Materials and Methods：Urinary NGF levels were measured in 62 diabetic patients and in 18 control subjects without lower urinary tract symptoms or erectile dysfunction. The urinary NGF levels were measured by enzyme-linked immunosorbent assay. The total urinary NGF levels were normalized to the concentration of the urinary creatinine (NGF/Cr) level. Participants were evaluated using the International Prostate Symptom Score (IPSS), Overactive Bladder Symptom Score (OABSS), the five-item version of the International Index of Erectile Function questionnaire (IIEF-5) and measurement of flow rate and postvoid residual urine volume. The Pearson correlation analyses were used to examine urinary NGF/Cr levels associated with IPSS, IIEF-5, OABSS and uroflowmetry.

Results：The mean (SD, range) age of the diabetic patients was 40.0 (6.3, 19-45) years and the mean duration of diabetes was 4.0 (4.1, 0.5-20) years. Diabetic patients had significantly higher urinary NGF/Cr levels compared to the controls (0.52±1.2 versus 0.01±0.02, $p=0.04$). The urinary NGF/Cr levels were negatively correlated with IIEF-5 score ($p=0.02$, coefficient= -0.33, 0.06-0.55) and positively correlated with systolic pressure ($p<0.001$), diastolic pressure ($p=0.01$), neuropathy ($p=0.02$), retinopathy ($p=0.03$) and diabetic duration ($p=0.04$). The urinary NGF/Cr levels were not correlated with age ($p=0.09$), IPSS score ($p=0.25$), OABSS score ($p=0.11$), voided volume ($p=0.60$), peak flowrate ($p=0.44$), or postvoid residuals ($p=0.19$). Thirty-six patients with urinary NGF/Cr level <0.05 had higher IIEF-5 score than 27 patients with urinary NGF/Cr level ≧0.05 (20.5±5.0 versus 16.8±6.6, $p=0.02$).

Conclusions：Urinary NGF levels were elevated in type 2 diabetic male aged less than 45 years. Urinary NGF levels were correlated with erectile dysfunction but not correlated with OAB symptoms, lower urinary tract symptoms or the parameters of uroflowmetry in these patients.

S-8

兩側主要骨盆神經結在電刺激小內臟神經所引起大白鼠兩側儲精囊內壓增加之神經徑路角色

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The Role of Bilateral Major Pelvic Ganglia in the Neural Pathway of Electrical Stimulation of Lesser Splanchnic Nerve-induced Seminal Vesical Pressure Increase in the Rat

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Objectives: The results of our previous study suggested that electrical stimulation of the lesser splanchnic nerve (LSN) or major pelvic ganglion (MPG) may elicit a simultaneous significant similar increase of seminal vesical pressures (SVP) on each side seminal vesicle in the rat. The aim of this study was to investigate the role of bilateral major pelvic ganglia (MPG) in the neural pathway of electrical stimulation of LSN-induced SVP increase in the rat.

Materials and Methods: Male adult Sprague-Dawley rats were used. A PE50 tube was inserted into each side seminal vesicle to simultaneously monitor each side SVP, respectively on the polygraph. The MPG and LSN were identified and was electrically stimulated with stimulus parameters (10 V, 40 Hz, 1 ms, 60 seconds), respectively. Then the right MPG was resected and the LSN was electrically stimulated. Following resection of right MPG, the left MPG was also resected and the LSN was electrically stimulated again. The amount of SVP increase was calculated by subtracting resting SVP from peak SVP. The amount of SVP increase between left and right side was compared with Mann-Whitney *U* test.

Results: There was a comparable amount of SVP increase at left and right side (60.3 ± 8.2 mmHg and 61.1 ± 6.3 mmHg, respectively, $p=0.818$) after electrical stimulation of right MPG. An equivalent amount of SVP increase at left and right side (56.4 ± 9.8 mmHg and 44.7 ± 8.5 mmHg, respectively, $p=0.310$) after electrical stimulation of LSN was also noted. After resection of right MPG followed by electrical stimulation of LSN, again there was a comparable amount of SVP increase at left and right side (55.5 ± 7.1 mmHg and 34.7 ± 3.3 mmHg, respectively, $p=0.065$). However, there was no change of SVP at each side of seminal vesicle (resting SVP 3.3 ± 0.7 mmHg vs. peak SVP 3.3 ± 0.7 mmHg at left side; resting SVP 7.7 ± 2.1 mmHg vs. peak SVP 7.7 ± 2.1 mmHg at right side, respectively) after resection of bilateral MPG followed by electrical stimulation of LSN.

Conclusions: The results suggest that electrical stimulation of the MPG and LSN may induce a simultaneous significant increase of SVP on the left and right side seminal vesicle in the rat. The amount of SVP increase is not significantly different between left and right side seminal vesicle. This electrical stimulation of LSN-induced bilateral SVP increase is eliminated after resection of bilateral MPG. This implies that the neural pathway of electrical stimulation of LSN-induced SVP increase is through at least one side MPG in the rat.

S-9

利用神經損傷大鼠模式研究血小板纖維蛋白促進海綿體神經再生的效果

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The Effect of Platelet Rich Fibrin on Cavernous Nerve Regeneration in a Nerve Injury Rat Model

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Objectives: To assess whether platelet rich fibrin (PRF) have theraputic effects on cavernous nerve (CN) regeneration.

Materials and Methods： Twenty-four 12-week old male Spraque-Dawley rats were used in this study. These animals were randomly divided into four groups: Group I underwent sham operation, while three groups underwent bilateral CN crush. Three crush-injury groups were treated at the time of injury with an application of PRF, or platelet-derived growth factor (PDGF) or normal saline only on the site of injury, respectively. Erectile function was assessed by CN electrosimulation at 4 weeks. Penile tissue and CN were collected for histology.

Results： Four weeks after surgery, in the group that underwent bilateral nerve crush with normal saline , the functional evaluation showed a lower mean maximal intracavernous pressure (ICP) than that in the sham group. Both PRF and PDGF treatments resulted in significant recovery of erectile function of erectile function, as compared with normal saline treatment. Histologically, the groups with the treatment of PRF and PDGF had significantly less fibrosis and a significant preservation of myelinated axons of CNs compared with injured controls.

Conclusions: The application of PRF and PDGF to the site of CN crush injury can improve recovery of erectile function and facilitate nerve regeneration in a rat model.

***S-10**

高泌乳素血症對大鼠陰莖海綿組織一氧化氮生成酶表現的效應

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The Effects of Hyperprolactinemia on NO Synthase Expression in Carvernosal Tissue of Rat Penis

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Purpose: Hyperprolactinemia (hyperPRL) induces dysfunction of reproductive system in male mammals. Literature has confirmed the appearance of impaired erectile function in these animals. Intra-penis pressure is much decreased in +AP hyperPRL rats while at pharmaco-stimulant was given. The purpose of this study is to discuss the effects of hyperPRL on expression of NO synthase (NOS) in carvernosal tissue of rat penis.

Materials and Methods: Male Sprague-Dawley rats (8 to 12 week-old) were grafted with either anterior pituitary glands (+AP) or similar amount of cerebral cortex (+CX) to the recipient subrenal capsule 6 weeks before experiments. The PRL levels were confirmed via RIA. Penile tissue was retrieved, and frozen sectioned for immunofluorescent (IF) staining. The antibodies for 3 NOS (including endothelial (e), neuronal (n) and cytokine-inducible (i) NOS) were used for IF staining. The intensity of the fluorescence was scored independently.

Results: The expression of eNOS was significantly enhanced in +AP hyperPRL groups, but nNOS and iNOS were markedly decreased in +AP hyperPRL rats.

Conclusion: Based on our data, we demonstrated that the presence of erectile dysfunction in +AP hyperPRL rats is caused by the decreased expression of nNOS and iNOS. The increased expression of eNOS might be due to the compensatory change under hyperPRL. The involvement of other cytokines in the mechanism to alter the expression of NOS needs further verification.

S-11

令人滿意的神經阻斷麻醉方式應用於門診人工陰莖植入手術的臨床經驗

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Clinical Experience of a Satisfied Block for Outpatient Penile Prosthesis Implantation

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Objectives: Careful anesthetic methods of proximal dorsal nerve block, peripenile infiltration, penile crural block, cavernous nerve blockage, and topical injection on an as needed basis seem satisfactory for outpatient penile implantation. We propose a reliable, systematic, and reproducible protocol for these anesthetic methods in an attempt to extend their clinical applications.

Materials and Methods: A careful anesthetic block of the paired dorsal nerve in the penile hilum associated with a peripenile infiltration is sufficient to anesthetize the penile structures, except for the sinusoids and penile crura where bilateral crural blockage is required. The cavernous nerve block is mandatory to cover the sinusoidal tissues. A further topical injection of the medial low abdominal region makes it possible for implanting a three-piece model. This availability was derived from chronic clinical practice based on a new knowledge of penile anatomy.

Results: Blockade of the proximal dorsal nerve, peripenile infiltration, penile crural block, and cavernous nerve blockade have resulted in the successful implantation of 52 AMS 600, 13 AMS 650, 7 Ambicor, 4 Dynaflex, 18 Duraphase, 36 Acuform, and 32 Malleable penile implants on an outpatient basis, except for one man who required inpatient treatment. Extended topical infiltration of the medial low abdominal region was mandatory to finish three implantations of the AMS 700 model. Common immediate side effects included puncture of the vessels, subcutaneous ecchymosis, transient palpitations and dilatation pain. However, there were no significant late complications. There was no statistical difference in scoring using a visual analog scale among patients who underwent different models of prosthesis implantation except for those who received the AMS 700 model.

Conclusions: Recent discoveries and better understanding of the penile anatomy have been meaningful in the development and improvement of local nerve blockade techniques for penile implants, while minimizing anesthetic adverse effects and resulting in a rapid return to daily activity with minimal complications.

S-12

陰莖靜脈閉鎖機轉：研究電燒灼對於解凍大體陰莖海綿體產生的效應所獲得的證據

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Penile Venous Occlusion Mechanism: Evidences from an Electrocautery Effect to the Sinusoids on Defrosted Human Cadavers

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Objectives: The venous occlusion mechanism is paramount for reaching penile rigid erection, the relationship between the penile erection-related veins and the tunica albuginea (TA) is not clearly elucidated. We sought to conduct an electrocautery study in order to explode this issue.

Materials and Methods: In late 2010 five adult human male defrosted cadavers whose penis is intact were used for this study. A dorsally median longitudinal incision was made from the retrocoronal sulcus to the pubic region in order to facilitate vascular access. Two #19 scalp needles were inserted and firmly fixed in place with 4-0 silk sutures at the 3 and 9 o'clock positions respectively. One needle was connected to an infusion pump and used to inject 10% colloid into the corpora cavernosa, whereas the other needle was used to monitor the intracavernosal pressure (ICP). The deep dorsal vein (DDV) was freed for 5cm segment via opening the Buck's fascia, clamped by two hemostats and cut in-between followed by a $2.5\times0.5cm^2$ block of dorsal corpus cavernosum some 0.5cm proximal to retro-coronal sulcus while an emissary vein is included. A watertight milieu was reestablished by 6-0 nylon suture of the corporotomy. A similar tissue block was obtained after an electrocautery, 45 or 60 watts, was applied to the emissary branches of the proximal DDV stump while the ICP was kept at 0, 50, 70, 130 and 150mmHg respectively. Those tissues were rendered for special stains and analysis.

Results: The electrocautery effect penetrated categorically into the intracavernosal sinusoids in subject with ICP no more than 70mmHg. This effect was stopped at deeper collagen bundles of the outer longitudinal layer of the TA in subject with ICP 130 and 150mmHg however.

Conclusions: An extracorporeal electro-cautery can not penetrate the sinusoidal wall while an ICP is higher than 130mmHg, in contract it deemed penetrates at ICP lesser than 70mmHg. Implying the outer longitudinal layer of the TA can work as a sustainable wall against the sinusoidal pressure in order to provide rigidity building up.

S-13

年輕病患因陰莖增大術導致的陰莖靜脈閉鎖功能異常：陰莖靜脈截除手術後的長期追蹤結果

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Veno-occlusive Dysfunction in Young Patients resulting from Jelqing Maneuver: Long-term Results of Penile Venous Stripping Surgery

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Objectives: There is currently believed that the contributor of erectile dysfunction in young adult is psychogenic origin. We report a retrospective study on impotence resulting from jelqing maneuver at the age younger than thirsty.

Materials and Methods: From October 2000 to September 2010, 25 patients currently available, aged from 19 to 30 years, were diagnosed with veno-occlusive dysfunction. Subsequently, 18 of them underwent penile venous surgery and were assigned to the venous group. The remaining 7 men were allocated to control group while any strategies but venous surgery were used as necessary. All were followed and evaluated with the abridged five-item version of the international index of erectile function (IIEF-5) and cavernosography if required.

Results: In the venous group their pre-operative IIEF-5 score of 12.1±2.3 (n=18) was increased to 21.7±1.7 ($p < 0.000$) postoperatively. In the control group, however, the mean preoperative IIEF-5 score of 12.3±2.1 (n=7) was changed to score of 13.9±2.9 ($p > 0.05$). Although there was no significant difference between the two groups' preoperative IIEF-5 score, there was a statistically significant difference after venous surgery was undergone. The follow-up period ranged from 6 months to 11 years, with an average of 5.0±1.4 years. Eventually 5 (27.8%) and 5 (83.3%) men required additional oral phosphor-di-esterase 5 inhibitors to venous and control group respectively. In the control group a man suffered from depressive status without a sexual partner.

Conclusions: In this study, we therefore may conclude that "venous contribution" ought to be also an important factor rather than just the psychogenic origin in those impotence male who suffer from jelqing maneuver.

S-14

進階陰莖靜脈解剖學的影像學證據

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Imaging Evidence of Advanced Penile Venous Anatomy

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Objectives: Although penile erection-related veins have been recently depicted as a deep dorsal vein (DDV), a pair of cavernosal veins (CVs) and two pairs of para-arterial veins (PAVs) between the Buck's fascia and the tunica albuginea, which is derived from cadaveric dissection and is not beyond controversy. We sought to conduct an imaging study on clinical patients in order to elucidate whether this information is sustainable.

Materials and Methods: From October 2008 to April 2010, 103 patients, aged 21 to 75 years, underwent a dynamic cavernosography. It entailed injecting 60 ml of a 30% Loversol solution intracavernously via a 19-gauge scalp needle firmly affixed to the distal and middle third of penile shaft at lateral aspect respectively. They were categorized into distal (n=81) and middle (n=22) group respectively. It was taken serially from 0.33, 0.67, 1.00, 1.33, 1.67, 2.00, 2.33, 2.67, 3.00, 3.33, 3.67, 4.00, 5.00, 7.00, 10.00, 15.00 seconds while the infusion rate is set at 240 min/min. Analysis of these data was made.

Results: In all patients the CVs are consistently first shown before that of the DDV. In the distal group, the presentation of DDV catches on CVs is shown in 46 (45.7%) cases at the middle third, whereas 76 (93.8%) in the proximal third. In the middle group, the presentation of DDV catches on CVs is shown in 14 (63.6%) cases at the proximal third. There are a DDV, a pair of CVs and a group of PAVs between the Buck's fascia and the tunica albuginea in all patients.

Conclusions: We may conclude that penile sinusoidal drainage are initially via corresponding CV and then to DDV and/or to superficial veins. There is PAV which is poor identifiable.

T-1

於勃起功能障礙患者篩檢睪固酮低下症

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Screening for Testosterone Deficiency in Men with Erectile Dysfunction

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Objectives: Several studies have evaluated the positive effects of testosterone treatment in men who failed to respond to a phosphodiesterase-V inhibitor. Screening for testosterone deficiency (TD) in men with erectile dysfunction (ED) remains controversial.

Materials and Methods: Male subjects aged over 40 years who presented to urological outpatient clinics at institution with the diagnosis of ED were screened for TD from 2004 to 2010. TD was defined as serum total testosterone (TT) <300 ng/dL by one sampling, mostly in afternoon without fasting. Demographic data (age, body mass index, and smoking habit) and co-morbid were derived from chart review. Co-morbid included diabetes (DM), hypertension (HT), hyperlipidemia (cholesterol >240 or triglyceride >200 mg/dL), and cardiovascular event (any one of angiographically documented coronary artery disease, acute myocardial infarction, transient ischemic attack, stroke or peripheral arterial occlusive disease). Subjects with the following surgical conditions were excluded: a history of prostate cancer, radical pelvic surgery, endocrinopathy (except DM), liver cirrhosis and chronic renal insufficiency. Control group comprised of 206 adults without ED from another study.

Results: A total of 799 ED patients had sampled TT in that period (response rate 799/1103=42.0%). Compared with the controls, the ED group was older in age (57.3 vs. 52.6 yrs) and higher prevalence of DM (39.3 vs. 6.3%), HT (41.0 vs. 23.8%), hyperlipidemia (36.0 vs. 27.7%) and had a lower TT level (370 vs. 550 ng/dl) and higher prevalence of TD (37.1 vs. 5.3%) ($P<0.05$). Having DM, HT, hyperlipidimia, or a higher BMI (≧24) was associated with a lower level of TT in ED patients. Using logistic regression, the odds ratio for TD in a higher BMI (>27vs. <24), DM and HT was 2.14 (1.38-3.31), 1.67 (1.17-2.37), and 1.44 (1.02-2.03), respectively ($P<0.05$).

Conclusions: Compared with the controls, the ED patients had a significant lower TT level and higher prevalence of TD, attributed to DM, HT and a higher BMI.

***T-2**

決定用以判定血清中生物可用性睪固酮不足之數值

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Detremination of a Cut-off Value of Serum Bio-available Testoterone Level in Diganosing Male Late Onset Hypogonadism

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Purpose: Serum testosterone levels including the total, free and bio-available testosterones are suggested to be measured for the diagnosis of male late onset male hypogonadism. While cut-off values have been recommended for the total testosterone level (like less than 320 ng/dL) and the free testosterone level (like less than 6.6 ng/dL), there is still no suggested cut-off value of the bio-available testosterone. In the current study, we tried to determine a cuff-off of the bio-available testosterone.

Materials and Methods: From November 2008 to October 2009, the serum total testosterone level, albumin and sex hormone binding globulin and (SHBG) were measured in 1070 men who received general health check-up in National Taiwan University Hospital. Serum free testosterone and bio-available testosterone levels were calculated by the previously suggested formula. Among them, 774 men had enough data for analysis. The subjects were divided into 4 groups according to age (40-49, 50-59, 60-69, 70-79). Different values were tested to determine a proper cut-off value of the bio-available testosterone.

Results: If a cut-off value of 160 ng/dL (50% of 320 ng/dL) was used for the bio-available testosterone, 67.7% or 49.7% of men diagnosed with low serum free or total testosterone level would be found to have low serum bio-available testosterone level. The percentage increased to 96.3% or 70.2% if 176 ng/dL (55% of 320 ng/dL) was used and 99% or 85.8% if 192 ng/dL (60% of 320 ng/dL) was used. When using 176 ng/dL as the cut-off value, 16%, 27%, 43% and 59% in different age groups would have low serum bio-available testosterone level.

Conclusions: We suggest to use 176 ng/dL as the cut-off value of serum bio-available testosterone level.

T-3

台灣老化男性雄性素受體 CAG repeat 基因多型性對類似雄性素缺乏症狀之影響

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The Impact of Androgen Receptor CAG Repeat Polymorphism on Androgen Deficiency-like Symptoms in Aging Taiwanese Men

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Objectives. Late-onset hypogonadism has become an area of interest in recent years, and can cause a broad aspect of physical, psychological and sexual symptoms in aging men. However, there is no clear testosterone threshold associated with symptomatic hypogonadism. In addition, the androgen receptor (AR) CAG repeat polymorphisms may also play an important role in those symptoms. The aim of study is to evaluate the impact of AR CAG repeat polymorphisms on androgen deficiency-like symptoms in aging Taiwanese men.

Materials and Methods. From August 2007 to April 2008, a free health screening for men older than 40 years was conducted by a medical center in Kaohsiung, Taiwan. All participants received detailed physical examination and answered a health questionnaire including items from Androgen Deficiency in the Aging Male (ADAM) questionnaire. Blood samples were drawn between 8:00 and 12:00 AM to determine serum testosterone levels and AR CAG repeat polymorphisms of all participants.

Results. 702 men with mean age of 57.2±6.5 years (range: 43-87 years) were included for final analysis. The prevalence of androgen deficiency-like symptoms are increased with the decline of serum testosterone levels. There is no significant association between the distribution of AR CAG repeat polymorphism and serum testosterone levels. However, subjects with longer AR CAG repeat polymorphisms posed significantly higher risk to develop androgen deficiency-like symptoms in normal testosterone levels.

Conclusions. Androgen deficiency-like symptoms could be influenced by serum testosterone levels and AR CAG repeat polymorphism concomitantly. AR CAG repeat polymorphisms can modulate the appearance of those symptoms especially in normal serum testosterone levels. Further research might need to elucidate whether the efficacy of testosterone replacement therapy can also be influenced by AR CAG repeat polymorphisms.

T-4

男性下泌尿道症狀和性荷爾蒙的相關性

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The Association between Male Lower Urinary Tract Symptoms (LUTS) and Sex Hormone

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Objectives: To investigate the association between serum sec hormone and lower urinary tract symptoms (LUTS) in men aged 40 to 80 years.

Materials and Methods：A cross-sectional study was conducted in 590 men receiving physical checkup. Serum total testosterone (TT), free testosterone (FT), dihydrotestosterone (DHT), and estradiol (E2) levels were measured. Total prostate volume (TPV) and international prostate symptom score (IPSS) questionnaire were obtained. Subjects had documented genitourinary cancer, acute or chronic urinary retention, frank neuropathy, urinary tract infection, history of transurethral surgery, using anti-androgen or medication for prostate were excluded. Correlations were determined using univariate and multivariate regression analyses.

Results：Two hundred seventy men (aged 40–79 years, mean age 54 years) were analyzed. All hormones except DHT significantly associated with age. Subjects with hypogonadism (serum testosterone less than 350 ng/mL) were elder and have high IPSS score (6.3 vs. 4.7, $p=0.027$). On univariate analyses, the total and storage IPSS had significantly negative association with total and free testosterone. On multivariate analyses, only age was significantly associated with IPSS.

Conclusions：In our study, IPSS was not associated with serum levels of sex hormones in men after adjusting for age. The pathophysiology of LUTS is complex and probably includes factors other than circulating sex steroid levels.

T-5

睪固酮在攝護腺癌細胞株之增生及睪固酮受體的影響

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Effects of Testosterone on Proliferation and Androgen Receptor Expression in Human Androgen-sensitive and -Independent Prostate Cancer Cell Lines.

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Purpose: Testosterone is a steroid hormone from the androgen group that plays a key role in the development of male reproductive tissues such as the testis and prostate as well as promoting secondary sexual characteristics such as increased muscle and bone mass and hair growth. In addition, testosterone is essential for health and well-being as well as preventing osteoporosis. In aged adults, the use of testosterone was reported as a cancer risk in patients with nascent or occult prostate cancer. Prostate cancer is the second most common neoplasia in men. Almost all prostate carcinomas are originally androgen-dependent. However, during the hormonal therapy, androgen-independent tumor cells eventually emerge, leading to clinical relapse. Recent studies suggested the amplification of androgen receptor (AR) gene is likely to be involved in the failure of the hormonal treatment. In this study, we study the effects of testosterone on the proliferation of prostate cancer cells as well as the expression of AR and prostate specific antigen (PSA), to see if there are different responses on androgen-sensitive and -independent prostate cancer cells.

Materials and methods: Androgen-sensitive and -independent prostate cancer cell lines, CWR22Rv1 and PC-3, respectively were used in this study. Cells were treated with different concentration of testosterone ranging from 1nM to 10 μM, and cell proliferation effects of testosterone in complete or serum-free medium were accessed by MTT assay. To investigate the expression level of AR and PSA after testosterone treatment, semi-quantitative RT-PCR was performed.

Results: Moderately increasing of dose-dependent cell proliferation occurred from 1nM to 100nM of testosterone treatment but significantly decreasing when treated with 1 μM and 10 μM of testosterone, in all cell lines tested. The expression of AR and PSA were increased in CRW22Rv1 treated with testosterone, but were un-detectable in PC-3.

Conclusion: Cell proliferation occurred in prostate cancer cell lines treated with testosterone regardless of their androgen sensitivity. In addition, Testosterone induces PC-3 cell proliferation but the expression of AR and PSA were undetectable, suggesting an unidentified route regulating the proliferation other than AR in androgen-independent prostate cancer cells.

T-6

睪丸旁的惡性脂肪肉瘤—病例報告

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Paratesticular Liposarcoma – A Case Report

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Objectives: We present a case of paratesticular mass with rare pathology.

Case Presentation：A 54 year-old male patient suffered from right scrotal mass for about one year. The tumor was located at upper margin of right testis. Geminal cell related tumor markers showed unremarkable. The tumor grew gradually. On examination, the palpable mass was firm, movable and about 3x3x4 cm in size. He was admitted and received radical orchiectomy smoothly. The pathology showed undifferentiated liposarcoma with margins free of tumor.

Conclusions：Undifferentiated liposarcoma is a rare mixed histologic subtype with association of well-differentiated liposarcoma. Most dedifferentiation occurred in de novo lesions but some also developed as a late complication of a preexisting well-differentiated liposarcoma. The prognosis of liposarcomas with dedifferentiated component of entirely low grade was more similar to traditional liposarcoma. It can be learned from this case that upon encountering a large, painless, cystic or solid mass in the paratesticular scrotal region, rare primary mesenchymal tumors including sarcomas should be included in the differential diagnosis.

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